Responses to Comments – Regulatory Agencies Comments on

Final Supplemental Radiological Assessment
Installation Restoration Sites 1 and 2
Long Beach Naval Complex, Long Beach, California,
Received November 10, 2014

Sheetal Singh, Ph.D. California Department of Public Health (CDPH)-EMB **Response to DON Comments of FINAL *Supplemental Radiological Assessment (SRA), Installation Restoration (IR) Sites 1 and 2*; Long Beach Naval Complex, Long Beach, California. Final IR Site 1 and 2 SRA issued 19 May 2014 (Dated Nov 10, 2014)**					
General Comments					
I.				While EMB is aware this document has been issued in its "final" iteration, EMB would like to express its appreciation to have the opportunities to review and comment at this later date.	The Navy appreciates EMB's comments and will address the comments in the form of a response to comment letter and future reports.
II.				EMB is aware the "main objective of the Radiological Assessment was to collect sufficient data to evaluate potential radiological risks to receptors, industrial workers, on the surface at IR Sites 1 and 2." (Section 1.6; "Report Objective", page 9.) Since the Navy's estimates of dose and risk for the Radionuclide(s) of Concern (RCOCs) have been applied to an industrial worker exposure scenario and limited to no greater than 12 inches below ground surface (bgs), it is EMB's conclusion that the Navy will not pursue an unrestricted release of IR Sites 1 and 2. The task of determining if the information within this Radiological Assessment is sufficient to address State of California radiological licensing issues and assess restricted release compliance with a non - Federal transferee is not within the purview of EMB. Such a task is the responsibility of CDPH-Radiologic Health Branch (RHB) upon transfer of property to a non-Federal entity. Therefore, it would be prudent for the Base Realignment and Closure (BRAC) office of the Department of Navy (DON) to include CDPH-RHB to determine if sufficient data has been collected to evaluate potential risks to industrial worker receptors, as this would potentially facilitate the forward movement of activities related to property transfer with restrictions on land use.	The purpose of the Supplemental Radiological Assessment at IR Site 1 and 2 was to evaluate potential risks to industrial workers from the ground surface. The Navy's position has been to evaluate the Site conditions for radiological contaminants of concern (rCOC) and to evaluate the remedies selected in the June 2000 Record of Decision (ROD) would be protective. The IR Site 1 and 2 ROD included several land use controls (LUCs) including: • Residential use is prohibited. • Site operations shall be restricted to industrial uses consistent with the California Coastal Act and the Certified Port Master Plan for the Long Beach Harbor District. • Industrial use shall not include a hospital for humans, school for persons under 21 years of age, day care center for children, or any permanently occupied human habitation other than those used for industrial purposes. • Removal of soil from IR Sites 1 and 2 prohibited, unless approved by the DTSC. Excavated soil and groundwater must be tested for hazardous substances and hazardous wastes. Construction and/or operations on the property shall not interfere with ongoing monitoring or assessment of work

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General Comments					
					being conducted by or for federal, state, or local regulatory agencies, unless specifically approved by the appropriate lead agency. • Removal and disposal of contaminated soil or groundwater shall be conducted in accordance with all applicable federal, state, and local regulations governing removal, transport, and disposal of hazardous substances and hazardous waste. • Disturbance or use of existing groundwater wells is prohibited unless specifically approved by all regulatory agencies. No groundwater production wells may be installed for residential, municipal, agricultural, or industrial use. Monitoring and other test wells are not subject to this provision, including borings for the purpose of testing wells, wells for monitoring the quality of groundwater, and borings to define geology. • Groundwater shall not be used for drinking water without the expressed authorization of the RWQCB. The Navy will continue to work with DTSC and will include CDPH-RHB in discussions as we move to determine if the site and current LUCs are protective.
III.				It is EMB's conclusion that the information provided in the Radiological Assessment of IR Sites 1 and 2 indicates IR Sites 1 and 2 remain radiologically "impacted", and not suitable for a Radiological Unrestricted Release Recommendation (RURR).	Since the current Site remedy selected in the 2000 ROD which already includes LUCs may also be protective for the rCOC identified during the removal action and Supplemental Radiological Investigation the Navy is not seeking RURR for the 33 survey units (SUs) evaluated in the Supplemental Radiological Investigation.

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Specific Comments					
I. 1		27-30	**Section 4.1 "Instrument Selection"**	There is no mention of the "Micro-Rem" or Ludlum Model 2360 instruments and their use. Please explain their omission from the main document.	The Bicron micro-rem and the Ludlum Model 2360 alpha/beta detector were used in support of the Radiation Protection Plan described in Section 6.0 of the Final Safety and Health Plan dated September 2008 (HASP) and implemented as part of the Supplemental Radiological Assessment of IR Sites 1 and 2 at Long Beach. Because these instruments were not used to collect data in support of the objectives of the Supplemental Radiological Assessment they are not discussed in the report. The Model 2360 was used to perform contamination surveys of equipment entering the site and equipment and personnel leaving the site as described in Section 6.3 of the HASP and was determined to be equivalent to the Ludlum Model 44-9 GM detector described in the HASP. The Bicron micro-rem was used to monitor general area dose rates as part of the ALARA evaluation described in Section 6.7 and Table 3.2 of the HASP. While no instrumentation was specified in the HASP, the Bicron micro-rem is suitable for monitoring general area dose rates in the range of 1 millirem per hour to maintain worker doses ALARA.
2.		31-32	**Section 4.3 Instrument Operational Checks**	The reference to Appendix D as including records of daily response checks is incorrect. Appendix D appears to be related to dose modeling and not instrument operational checks. Please see Comment (11) (1(a) below.	The reference to Appendix D is a typographical error and should refer to the electronic files provided in Appendix E.

Specific Comments					
3.		51	**Section 6.4; Identification and Removal of Radioactive Items**		
	a.	51	**Table 6.4-1**	**("Radioactive Articles (Point Sources) Removed During Soil Sampling**	
			i	Survey Unit (SU) 05 in Figure 6.4-1 ["Locations of Articles (Point Sources) Found in Survey Units"], indicates two locations, 17 and 18, but Table 6.4-1 only lists "Location Number" 17 twice. While the information given in Section 6.4 ("Identification and Removal of Radioactive Items") states that "two radioactive items were removed" from Location #17, Location #18 is not listed in Table 6.4-1 and no information specific to Location #18 is given in Section 6.4. Please explain why Location #18 in SU 05 has been excluded from Table 6.4-1, and Section 6.4, even though Location #18 is indicated in Figure 6.4-1.	After review the sampling records it was determined that there was not a sampling location 018 in SU 05 and that Table 6.4-1 and that there were only two Point Sources found in SU 05 both at location 017. Figure 6.4-1 will be corrected by removing Location 018 a foot note will also be added to the figure identifying the 2 point sources were found at SU 05 Location 017.
			ii	Please Check accuracy of DON Response to EMB comment 4b (Appendix F, page 7). For example, in Table 6.4.1, Survey Unit (SU) 05, has two sample sites identified as “017” in the final document. This contradicts the DON RTC where sample site “018” (500 µR/hr) was used. Please correct, as needed.	A transcription error was made while preparing the referenced response. The site SU 05 018 should have been recorded at SU 05 017. Table 6.4-1 is correct and has been verified through review of the collected data.
			iii	"SU 06" in the DON RTC document (Appendix F, page 7) is listed in both tables, but "SU 06" is missing in Table 6.4.1 in the final document. Please correct, as needed.	The point source at SU 6, 017 “10 uR/hr” was located in asphalt and was not removed. Table 6.4.1 comprises a list of point sources removed. The Navy will address this location in the next phase of work at IR Sites 1 &2.

Specific Comments					
	b.	52	**Last paragraph**	Please provide signed copies of manifests used for disposal of Low-Level Radioactive Waste (LLRW) generated and directly related to the work performed for this Supplemental Radioactive Assessment and the six B-25 boxes containing LLRW which were manifested and shipped offsite as LLRW, as per Section 1.2 ("Site Histories", page 4) of the final document. The manifests will provide EMB with documentation that the aforementioned LLRW was received at an appropriate off-site permitted disposal facility.	The Navy is providing the attached signed copies of all Navy manifests used for disposal of LLRW generated and directly related to the Supplemental Radioactive Assessment (Attachment 1) and the six B-25 boxes referenced in Section 1.2 of the final Radiological Assessment Report for IR Sites 1 & 2 (Attachment 2).
II			**Appendices**		
1.			**Appendix E, QC Charts", "Instrument QC Charts"**	Table/Spreadsheet: "Cabrera Alpha-Beta Counting Instrument"; Ludlum Model 2360 (s/n 184952); Ludlum Probe 43-93 (s/n PR 199836):	
	a.			The Instrument QC Chart for the given hand-held Ludlum Model 2360 (s/n 184952) survey instrument does not appear to be in compliance with the information in Section 4.3.1 ("Hand-held Instruments), page 32, of the main document. Information that source response and background response checks were performed before and after each use to ensure the instrument "was responding properly to radiation ... was not contaminated ..." is not evident. All the entries appear to indicate that survey instrument operational checks were performed on the next day of work, which is before each use, but the source and background response checks were not performed after each use. Since it is apparent the spreadsheet provided is a compilation, please provide copies of the original QC documentation used and signed by the "H.P. Technician" with the following initials/dates: "JR/CC"/"9/19/2008","Chuck"/"10/30/2008",chuck"/"10/2	As stated in the response to Specific Comment 1 on the Main Report, the Model 2360 was not used to support data collection activities as part of the Supplemental Radiological Assessment. The QC requirements for the Ludlum Model 2360 used to perform contamination surveys are described in the RPP in Section 6 of the HASP. Section 6.3 of the HASP states the survey instruments will be source-checked on a daily basis. All instruments were in compliance with the requirements stated in the work plan. The spreadsheet provided is not a compilation. The daily source and background checks were recorded directly in the spreadsheet as the data were collected on a daily basis. The spreadsheet is the original QC documentation. The instructions included with the Excel worksheet state the "H.P. Technician" column is for the initials of the technician performing the check. The "Technician Initials" column is provided to allow hand entry of initials if hard copies of the

Specific Comments					
				3/2008" and "SG"/"11/13/2008". EMB review of these copies will encompass survey instrument operational, source response and background response checks.	spreadsheet are used to document the instrument checks.
	b.			Results of QC checks of instrument functions, such as, battery check, audio, meter returns to zero indication after initial start-up, timer, etc. are not evident.	Cabrera procedures for radiation instrument operation OP-020 (survey meters), OP-021 (alpha-beta instrumentation), and OP-023 (micro-R meters) do not include any requirements to document performance of these types of checks. The only information required to be recorded is the instrument calibration (or calibration due) date, source check results, and background check results for all instruments. A detectability check is also required for alpha-beta instruments (MDA or MDC estimate). No additional requirements for recording these types of checks were included in the approved work plan. All required QC records were maintained in compliance with the approved work plan.
	c.			Please identify or provide a copy of a control chart used for this instrument (Ludlum Model 2360, s/n 184952).	Cabrera procedure OP-021 step 8.5.1.3 states a control chart will be constructed. The procedure states the daily efficiency will be tracked (source check only) but control charts were prepared for both background and source checks for the Model 2360. The control charts have been provided as an attachment (Attachment 3).
	d.			The "Control Chart bkg Average α/β cpm" value given as "1.40" does not match the average α/β cpm value of "1.2" given in the "Instrument Efficiency Calculator" for Ludlum Model 2360 (s/n 184952). Please clarify this conflict of information, amend the α/β cpm value and correct "MDA" calculations, as needed.	Two sets of QC related measurements were performed for the Ludlum Model 2360; once for the chi-square test (20 counts on 9/18/2008), and once for the daily source and background checks (10 counts on 9/19/2008). In addition, the first 10 counts from the chi-square test were also used for the "Instrument Efficiency Calculator." This has the unfortunate impact of generating three different values for the average and standard deviation used for three different purposes. The results of the chi-square test indicate the instrument was generating statistically consistent results, so there is no correction required for the "MDA Calculations."
	e.			The "Control Chart Source-bkg Average α/β cpm" value given as "4157.8" for a cpm does not match the average	Two sets of QC related measurements were performed for the Ludlum Model 2360; once for the chi-square test (20

Specific Comments					
				α cpm value of "3883.7 α cpm" (3884.9 - 1.9) as implied in the "Instrument Efficiency Calculator" for Ludlum Model 2360 (s/n 184952). Please clarify this conflict of information and correct the "α cpm" value, as needed.	counts on 9/18/2008), and once for the daily source and background checks (10 counts on 9/19/2008). In addition, the first 10 counts from the chi-square test were also used for the "Instrument Efficiency Calculator." This has the unfortunate impact of generating three different values for the average and standard deviation used for three different purposes. The results of the chi-square test indicate the instrument was generating statistically consistent results, so there is no correction required for the "MDA Calculations."
	f.			The "Control Chart Source-bkg Average α/β cpm" value given as "2282.5" for β cpm does not match the average β cpm value of "2237.9 β cpm"(2352.1 -114.2) as implied in the "Instrument Efficiency Calculator" for Ludlum Model 2360 (s/n 184952). Please clarify this conflict of information and correct the "β cpm" value, as needed.	Two sets of QC related measurements were performed for the Ludlum Model 2360; once for the chi-square test (20 counts on 9/18/2008), and once for the daily source and background checks (10 counts on 9/19/2008). In addition, the first 10 counts from the chi-square test were also used for the "Instrument Efficiency Calculator." This has the unfortunate impact of generating three different values for the average and standard deviation used for three different purposes. The results of the chi-square test indicate the instrument was generating statistically consistent results, so there is no correction required for the "MDA Calculations."
	g.			It is not clear how the one sigma values were calculated for "Control Chart bkg 1 sigma, cpm" and "Control Chart source 1 sigma, cpm". Please explain where such summary statistics are located in the Supplemental Radiological Assessment document.	The standard deviation is calculated automatically in the excel sheet using the "STDEV" function. The standard deviation is calculated based on 10 initial counts. The 10 initial counts, average, standard deviation, warning limits, and control limits are provided on the attached control charts and source data (See Attachment 3).
	h.			Define the acronym "MDA" (Minimum Detectable Activity) as it is used in the spreadsheets for Ludlum 2360 (s/n 184952). Include this acronym and its definition in the "Acronyms and Abbreviations" Section of Appendix C. Note: As per E.W. Abelquist: "The MDC (or minimum detectable activity for those who are more comfortable with MDA) corresponds to the smallest	The "MDA" column on the Excel spreadsheet is defined as the minimum detectable concentration defined in NRC NUREG/CR-1507, Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions (June 1998). NUREG/CR-1507 Equation 3-11 was used to calculate the values listed in the "MDA" column. Since E.W. Abelquist is the primary author of both documents the definition from the CDPH reference

Specific Comments					
				activity concentration measurement that can be achieved with a specified survey instrument and type of measurement procedure". See *Decommissioning Health Physics – A Handbook for MARSSIM Users (E.W Abelquist), 2001; Section 9.1, page 176.*	should be applicable. No changes were made to Appendix C because the MDC acronym covers both MDC and MDA, as indicated in the Abelquist definition.
	i.			It is apparent that the MDA (MDC) values for alpha and beta emitters did not incorporate IS0-7503-1 source efficiencies (ε_s). For example, in the "Cabrera Alpha-Beta Counting Instrument spreadsheet /log sheet (see Appendix E; "Instrument QC Charts"), the first result in the "MDA a (dpm)" column is "16.57". Given a background (Bkg) count equal to zero ("O"), a count time of "1" (minute), an instrument efficiency of "0.181", a detector active area of "100", and ε_s is not applied: $$MDC = \frac{3 + 4.65\sqrt{B}}{\varepsilon i \ \varepsilon s \left(\frac{Wa}{100}\right) T}$$ $$MDC = \frac{3 + 4.65(0)}{0.181(1)(1)}$$ $$MDC = \frac{3}{0.181} = 16.57 \ dpm$$ In addition, it is apparent that the instrument efficiency for alpha emitters was based upon the total activity (21,500 dpm) of the thorium-230 alpha emitter calibration source (Eberline Services s/n 4005-02) whereas, application of IS0-7503-1 would have the instrument efficiency calculations based upon the 2π alpha emission rate (10,900 cpm).	ISO Standard 7503-1 was not implemented as part of the approved work plan for the Supplemental Radiological Assessment. The separation of source and instrument efficiencies as described in ISO 7503-1 would not impact any measurements performed as part of the Supplemental Radiological Assessment because no alpha or beta measurements on surfaces were used as part of the assessment. The only measurements of alpha and beta radiation on surfaces were performed as part of contamination surveys performed under the Radiation Protection Plan described in Section 6 of the HASP. These measurements were performed under Cabrera's NRC Radioactive Materials License using procedures and survey techniques reviewed and approved by the NRC. Cabrera's NRC license was used under a reciprocity agreement signed by the State of California.

Specific Comments					
				For example: Using results from the Appendix E Instrument Efficiency Calculator for alpha and Ludlum Model 2360 (s/n 184952): 3883.7 / 10,900 = 0.356 If the source efficiency (ε_s) for alpha emitters is applied (0.25), then the 4 π total efficiency (ε_i) (ε_s) = (ε_t) = (0.356) x (0.25) = ("0.089".), then the MDA (MDC) = 33.7a dpm. The result of "33.7 α dpm" above compared to the given result of "16.57 a dpm" in the spreadsheet/log sheet would indicate that the results have been underreported by approximately 51%.	
	j.			Using the premise in Comment (i) above and using beta emitters instead of alpha emitters: It is apparent that the instrument efficiency for beta emitters was based upon the total activity (21,700 dpm) of the Tc-99 beta emitter calibration source (Eberline Services s/n 4004-02) whereas, application of IS0-7503-1 would have the instrument efficiency calculations based upon the 2rr beta emission rate (13,600 cpm). For example : Using results from the Appendix E Instrument Efficiency Calculator for beta and Ludlum Model 2360 (s/n 184952): 2237.9 /13,600 = 0.165	See response to Comment (i). No results were "under-reported. All results were calculated and evaluated using approved procedures for the purposes described in the approved work plan.

Specific Comments					
				If the source efficiency (ε_S) for beta emitters is applied (0.5), then the total efficiency (ε_I) x (ε_S) = (ε_t) = (0.165) x (0.5) = ("0.082".), then the MDA (MDC) = approximately 629 β dpm. The result of "629 β dpm" above compared to the given result of "501 β dpm" in the spreadsheet/log sheet would indicate that the results have been underreported by approximately 20%.	
	k.			Regarding the "Cabrera Alpha-Beta Counting Instrument" spreadsheet/log sheet for Ludlum Model 2360; sin 184952: Some of the MDA (MDC) "α dpm" results exceed the "Required MDA (DPM/100 cm^2) of "100". For dates with alpha "Daily Bkg Counts" of "2" and "3", the calculated MDA (MDC) results using IS0-7503-1 criteria are "108" and "124", respectively. Please explain if the "Daily Bkg Counts" are a result of a single background measurement within one minute, or the mean background count.	See response to Comment (i). ISO 7503-1 was not applicable to the contamination survey results performed as part of the Supplemental radiological Assessment so this comment is not relevant. As described in Cabrera procedure OP-021 the "MDA" column results are based on daily background counts and evaluated on a daily basis.
	l.			The results in Comments (i) and (j) above indicate the MDA (MDC) values given in the Appendix E, "Instrument QC Chart", "Cabrera Alpha-Beta Counting Instrument" have been underreported by approximately 51% for alpha emitters and underreported by approximately 20% for beta emitters. Therefore, the MDA (MDC) results given throughout the Radiological Supplemental Assessment, its appendices and all other results where misuse of total activities of calibration sources to calculate survey instrument efficiencies and total efficiencies will require re-calculation and correction using IS0-7530-1 criteria.	The results of the contamination surveys reported in the Supplemental Radiological Assessment were performed in compliance with all applicable procedures and directions form the approved work plan. All contamination survey results are technically defensible based on the approved collection and assessment procedures. Evaluation of contamination survey results using requirements different from those approved in the work plan may be within the purview of CDPH-EMB. Stating that failure to use this additional guidance 7 years after the data were collected is "misuse," "not NIST-traceable," and "not technically defensible" is inaccurate.

Specific Comments					
				It is within the purview of CDPH-EMB that total efficiency calculations based on IS0-7503-1 criteria are technically defensible due to the use of particle emission rate measurements, given in the certificate of calibration documents, are measurements provided by a calibrated instrument and a NIST traceable calibrated alpha or beta source. However, it is also the understanding of CDPH-EMB that total activities used for calculating instrument efficiencies in the subject document and its appendices are based upon calculations, which in turn, are based upon assumptions and are, therefore, not NIST traceable and not technically defensible.	
2.			**Appendix E, QC Charts", "Instrument QC Charts"**		
	a.			Charts of "QC Daily Source" and "Initial Source Readings" for the following instruments have been duplicated:	
			i	Ludlum Model 2221r (s/n 81308)/Ludlum Model 44-20 (sin PR269985);	
			ii	Ludlum Model 2221r (s/n 125457)/Ludlum Model 44-20 (sin PR269983).	
	b.			Some instrument QC charts with "Pass/Fail" results are illegible. Please provide copies of affected instrument QC charts with contrast sufficient to readily determine "Pass" or "Fail" result.	Copies of the requested QC charts have been provided as an attachment to these responses (Attachment 4).

ATTACHMENT 1

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EMS ENVIRONMENTAL MANAGEMENT SERVICES, INC.

150 North Wiget Lane, Suite 101, Walnut Creek, CA 94598
Phone: (925) 939-0687 Fax: (925) 938-0105

12/03/12

Manifest Supervisor
Environmental Management and Controls
3106 South Faith Home Road
Turlock, Ca. 95380

Subject: Shipment paperwork corrections, Shipment numbers USNB2009-028-EMC-01, and USNB2009-028-EMC-02

Gaye: EMS made the above referenced shipments on 11/14/12 from Long Beach, which arrived at your facility on 11/15/12. EMS requests that you correct the shipment paperwork to reflect a updated shipment number (an obsolete shipment number was used inadvertently) The new shipment number is **USN2010-055,** please make the necessary corrections on all shipment paperwork as required to assure the material can be tracked from processor to disposal site.

I have attached a spreadsheet below to assist in the process.

Original Shipment Documentation			Needed Corrections	
Shipment #	Date shipped	Drum #'s	Correction	Affected documents
USNB2009-028-EMC-01	11/14/2012	**7, 8,14**	1) Change shipment number from USNB 2009-028 to **USN 2010-055**	NRC-540/541, SW Export Permit, uniform manifest
USNB2009-028-EMC-02	11/14/2012	**9,10,13**	1) Change shipment number from USNB 2009-028 to **USN 2010-055**	NRC-540/541

Sincerely,
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

Thomas J. Dias
Senior Broker

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Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA8170023109
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300 CHEMTREC
4. Manifest Tracking Number: 008913657 JJK

GENERATOR

5. Generator's Name and Mailing Address:
US NAVY BRAC, PMO-W (LB)
1 Ave of the palms, SUITE 161, SAN FRANCISCO, CA 94130
415-743-4713 Attn: Douglas DeLong
Generator's Phone:

Generator's Site Address (if different than mailing address):
3978 Nimitz Rd. 300 feet past at the end of the pier
Long Beach, CA 90802

6. Transporter 1 Company Name: DENBESTE PH: 707-838-1407
U.S. EPA ID Number: CAD982513632

7. Transporter 2 Company Name: SLT Expressway
U.S. EPA ID Number: AZR000508515

8. Designated Facility Name and Site Address:
ENERGY SOLUTIONS, INC.
INTERSTATE 80, EXIT 49
CLIVE, UTAH 84029
Facility's Phone: 435-884-0155
U.S. EPA ID Number: UTD982598898

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-RCRA HAZARDOUS WASTE, SOLID (Soil contaminated with radionuclides and trace metals)	3	DM	~~225~~ 1670	P	611
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
PROFILE NUMBER 0817-02 (D-7, D-8, D-14) SHIPMENT # USNB 2009-028-EMC-01
ERG GUIDE 171 (ATTACHED) (Certificate of disposal required) L120185 DOCUMENT # LB-8135

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: DOUGLAS DELONG
Signature: ON BEHALF OF
Month: 11 Day: 14 Year: 12

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tim Skiver
Signature:
Month: 11 Day: 21 Year: 12
Transporter 2 Printed/Typed Name: KEVIN J. SULLIVAN
Signature:
Month: 11 Day: 26 Year: 12

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: J. Gardner
Signature:
Month: 11 Day: 27 Year: 12

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

FORM 540 (8/31/2013) ENERGY SOLUTIONS

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
209-678-6782 nights 209-667-1102 (8-5 weekdays)

ORGANIZATION
Thomas Gray & Associates

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
X YES
NO
Seal# 1248

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ------> 3 metal dms

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT?
If "Yes" provide Manifest Number ------>
☐ YES
X NO

EPA MANIFEST NUMBER

5. SHIPPER - NAME AND FACILITY
Environmental Management & Controls
3106 S Faith Home Road
Turlock, CA 95380

USER PERMIT NUMBER: 0112001229
SHIPMENT NUMBER: 12-ES-8

CONTACT: Gaye Nelson

6. CARRIER - Name and Address
SLT Expressway
7138 North 110th Ave
Glendale, AZ 85307

CONTACT: John Leber

SIGNATURE - Authorized carrier acknowledging waste receipt

SHIPPER I.D. NUMBER: 0817-02-0084
COLLECTOR
X PROCESSOR
GENERATOR TYPE (Specify)
TELEPHONE NUMBER: 209-667-1102
EPA I.D. NUMBER: AZR000508515
SHIPPING DATE: 11/26/2012
TELEPHONE NUMBER: 602-269-1600
DATE: 11/26/12

7. FORM 540 AND 540A PAGE 1 OF 1 PAGES(S)
FORM 541 AND 541A PAGE 1 OF 2 PAGES(S)
FORM 542 AND 542A PAGE 1 OF 1 PAGES(S)
ADDITIONAL INFORMATION PAGE 1 OF _____ PAGES(S)

8. MANIFEST NUMBER (Use this number on all continuation pages)
0817-02-0084

9. CONSIGNEE - Name and Facility Address
Energy Solutions LLC/Clive Disposal Site
"Bulk Waste Facility" Interstate 80, Exit 49
Clive, UT 84029 L 120185

CONTACT: Shipping and Receiving
TELEPHONE NUMBER (Include Area Code): 435-884-0155

SIGNATURE - Authorized consignee acknowledging waste receipt

DATE: 11/27/12

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: Gaye Nelson
TITLE: Manager
DATE: 11-26-12

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Non Regulated by Dept of Transportation-radiologically contaminated soil, debris	n/a	n/a	solid/oxides	Ac228, Bi212, Bi214, K40, Pb210, Pb214, Ra226 Sr90, Th232, Tl208	0.853738	(0.023074)	n/a	698 lbs	USNB2009-02 8-EMC-07
Non Regulated by Dept of Transportation-radiologically contaminated soil, debris	n/a	n/a	solid/oxides	Ac228, Bi212, Bi214, K40, Pb210, Pb214, Ra226 Sr90, Th232, Tl208	0.871128	(0.023544)	n/a	710 lbs	USNB2009-02 8-EMC-08
Non Regulated by Dept of Transportation-radiologically contaminated soil, debris	n/a	n/a	solid/oxides	Ac228, Bi212, Bi214, K40, Pb210, Pb214, Ra226 Sr90, Th232, Tl208	0.34743	(0.00939)	n/a	262 lbs	USNB2009-02 8-EMC-14

FOR CONSIGNEE USE ONLY

_____ Record Waste Description Inadequate
_____ Contamination or Leakage Detected
_____ Unexpected Exposure Rates Detected
_____ Labels, Marking, etc. Inadequate
_____ Container Integrity Inadequate
_____ Other
✓ No Violations Detected on this Shipment

20. TERMS AND CONDITION

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material__ is (or)_x_ is not a hazardous waste, this shipment is also accompanies by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by CFR 268.1. with the appropriate land-disposal restriction notice and/or certification as required by CRF 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc., and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc

C. WASTE MATERIAL: Generator represents & warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah, Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., and its officers, employees and agents against all losses and liability whatsoever if losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST), or if this shipment fails to meet the standards prescribed by the Dept of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (3-98)

JMC

FORM 540

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): **800-424-9300**

ORGANIZATION: CHEMTREC

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number =====> EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
EMS for BRAC PMO W-CSO, (LONG BEACH)
1 AVE OF THE PALMS, SUITE 161
SAN FRANCISCO, CA 94130

SHIPPER I.D. NUMBER: USNB2009-028-EMC-0
☐ COLLECTOR ☐ PROCESSOR

Control #
SHIPMENT NUMBER: USNB2009-028-EMC-01
☑ GENERATOR TYPE (Specify) G

CONTACT: THOMAS DIAS
TELEPHONE NUMBER (Include Area Code): 510-828-4962

6. CARRIER – Name and Address
~~Tri-State Motor Transit~~ DEN BESTE TRANSPORT
~~P.O. Box 113~~
~~Joplin, MO 64802~~ 820 Den Beste Ct. Windsor, CA 95492

EPA I.D. NUMBER: MOD-09-503-8998
SHIPPING DATE: 11/14/12

CONTACT: ~~Cassie Gardner~~ Lori DenBeste
TELEPHONE (Include Area Code): 707 838 1407 ~~1-800-248-8768~~

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE: 11/14/12

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): USNB2009-028-EMC-01

9. CONSIGNEE - Name and Facility
Environmental Management and Controls
3106 South Faith Home Road
Turlock, CA 95380

CONTACT: Gaye Nelson
TELEPHONE (Include Area Code): 209-667-1102

SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: Thomas Dias
TITLE: Dr. Blake
DATE: 11/14/12

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Non-regulated by Department of Transportation-radiologically contaminated soil,debris	**NA**	**NA**	**SOLID OXIDES**	**Ac-228**	**Bi-212**	**Bi-214**	**K-40**	**8.5374E-01**	**2.3074E-02**	**NA**	**825 LBS; 11.6 FT3**	**USNB2009-028-EMC-07**
				Pb-212	**Pb-214**	**Ra-226**	**Sr-90**					
				Th-232	**Tl-208**							
Non-regulated by Department of Transportation-radiologically contaminated soil,debris	**NA**	**NA**	**SOLID OXIDES**	**Ac-228**	**Bi-212**	**Bi-214**	**K-40**	**8.7113E-01**	**2.3544E-02**	**NA**	**825 LBS; 11.6 FT3**	**USNB2009-028-EMC-08**
				Pb-212	**Pb-214**	**Ra-226**	**Sr-90**					
				Th-232	**Tl-208**							
Non-regulated by Department of Transportation-radiologically contaminated soil,debris Soil	**NA**	**NA**	**SOLID OXIDES**	**Ac-228**	**Bi-212**	**Bi-214**	**K-40**	**3.4743E-01**	**9.3900E-03**	**NA**	**750 LBS; 7.5 FT3**	**USNB2009-028-EMC-14**
				Pb-212	**Pb-214**	**Ra-226**	**Th-232**					
				Tl-208								

FOR CONSIGNEE USE ONLY

20.

FORM 540 (08-03)

FORM 541

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
3	m3	0.8694	kg	1088.6217	NP	NP	NP	NP
	ft3	30.7000	lb	2400.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)	
MBq	2.0723E+00	NP	NP	NP	NP	(kg)	1.0173E-02
mCi	5.6008E-02	NP	NP	NP	NP	(lbs)	2.2427E-02

2. MANIFEST NUMBER: USNB2009-028-EMC-01

3. PAGE 1 OF 2 PAGE(S)

4. SHIPPER NAME: EMS for BRAC PMO W-CSO, (LONG BEACH)

SHIPMENT ID NUMBER: USNB2009-028-EMC-01

DISPOSAL CONTAINER DESCRIPTION | **WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER**

5. CONTAINER IDENTIFICATION NUMBER/ S.C. TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
USNB2009-028-EMC-07/USNB 2009-028	4	0.3285	374.2137	<5.0000E-03	<3.6740E-06	<3.6740E-05	22-H	0.3285	100 100	OXIDES/NONE	NP	Ac-228	1.3653E-02	3.6900E-04	AU
		11.6000	825.0000	<5.0000E-01	<2.2000E+02	<2.2000E+03		11.6000				Bi-212	1.3061E-02	3.5300E-04	
												Bi-214	1.0693E-02	2.8900E-04	
												K-40	1.8796E-01	5.0800E-03	
												Pb-212	1.9980E-02	5.4000E-04	
												Pb-214	1.0471E-02	2.8300E-04	
												Ra-226	1.0693E-02	2.8900E-04	
												Sr-90	5.6980E-01	1.5400E-02	
												Th-232 [3.3546E-03 kg]	1.3653E-02	3.6900E-04	
												Tl-208	3.7740E-03	1.0200E-04	
												Subtotal	8.5374E-01	2.3074E-02	
												Total	8.5374E-01	2.3074E-02	
												Source [3.3546E-03 kg]			
USNB2009-028-EMC-08/USNB 2009-028	4	0.3285	374.2137	<5.0000E-03	<3.6740E-06	<3.6740E-05	22-H	0.3285	100 100	OXIDES/NONE	NP	Ac-228	1.3653E-02	3.6900E-04	AU
		11.6000	825.0000	<5.0000E-01	<2.2000E+02	<2.2000E+03		11.6000				Bi-212	1.0693E-02	2.8900E-04	
												Bi-214	1.0471E-02	2.8300E-04	
												K-40	1.8796E-01	5.0800E-03	
												Pb-212	1.9980E-02	5.4000E-04	
												Pb-212	1.9980E-02	5.4000E-04	
												Pb-214	1.0471E-02	2.8300E-04	
												Ra-226	1.0693E-02	2.8900E-04	
												Sr-90	5.6980E-01	1.5400E-02	
												Th-232 [3.3546E-03 kg]	1.3653E-02	3.6900E-04	
												Tl-208	3.7740E-03	1.0200E-04	
												Subtotal	8.7113E-01	2.3544E-02	
												Total	8.7113E-01	2.3544E-02	

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6, or additional page

Note 1A: Barnwell Specific Container Description Codes. (Choose one code as may be applicable.)

A High Integrity Container - Poly
B High Integrity Container - Poly with Steel Shell
C High Integrity Drum Overpack - Poly
D High Integrity Container - Stainless Steel
E High Integrity Container - Fiberglass
F Liner - Steel

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11, or additional page

NOTE 2A: Barnwell Specific Waste Descriptor Codes. (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED.

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in item 13, or additional page
100. None Required.

Note 3A: Barnwell Specific Solidification and Stabilization Media Codes. (Choose this code if applicable)

M Wax Binder

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

2. MANIFEST NUMBER: USNB2009-028-EMC-01

3. PAGE 2 OF 2 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ S.C. TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	MBq	mCi	
												Source [3.3546E-03 kg]			
USNB2009-028-EMC-14/USNB 2009-028	4	0.2124 7.5000	340.1943 750.0000	<5.0000E-03 <5.0000E-01	<3.6740E-06 <2.2000E+02	<3.6740E-05 <2.2000E+03	22-H	0.2124 7.5000	100 100	OXIDES/NONE	NP	Ac-228 Bi-212 Bi-214 K-40 Pb-212	1.4097E-02 1.7871E-02 1.1988E-02 2.4679E-01 1.2469E-02	3.8100E-04 4.8300E-04 3.2400E-04 6.6700E-03 3.3700E-04	AU
												Pb-214 Ra-226 Th-232 [3.4636E-03 kg] Tl-208	1.2358E-02 1.1988E-02 1.4097E-02 5.7720E-03	3.3400E-04 3.2400E-04 3.8100E-04 1.5600E-04	
												Subtotal Total Source [3.4636E-03 kg]	3.4743E-01 3.4743E-01	9.3900E-03 9.3900E-03	
Shipment Totals		0.8694 30.7000	1088.6217 2400.0000									Source [1.0173E-02 kg]	2.0723E+00	5.6008E-02	

FORM 541A (08-03)

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
ISOTOPES REPORT

For Manifest # USNB2009-028-EMC-01

Isotope	Total Activity (MBq)	(mCi)
Ac-228	4.1403E-02	1.1190E-03
Bi-212	4.1625E-02	1.1250E-03
Bi-214	3.3152E-02	8.9600E-04
K-40	6.2271E-01	1.6830E-02
Pb-212	7.2409E-02	1.9570E-03
Pb-214	3.3300E-02	9.0000E-04
Ra-226	3.3374E-02	9.0200E-04
Sr-90	1.1396E+00	3.0800E-02
Th-232	4.1403E-02	1.1190E-03
Tl-208	1.3320E-02	3.6000E-04

EMS

FORM 540

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
800-424-9300

ORGANIZATION
CHEMTREC

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number =====>

EPA MANIFEST NUMBER

5. SHIPPER -- NAME AND FACILITY
EMS for BRAC PMO W-CSO, (LONG BEACH)
1 AVE OF THE PALMS, SUITE 161
SAN FRANCISCO, CA 94130

SHIPPER I.D. NUMBER
USNB2009-028-EMC-0
☐ COLLECTOR
☐ PROCESSOR

Control #

SHIPMENT NUMBER
USNB2009-028-EMC-02

☑ GENERATOR TYPE (Specify) G

CONTACT
THOMAS DIAS

TELEPHONE NUMBER (Include Area Code)
510-828-4962

6. CARRIER -- Name and Address
~~Tri-State Motor Transit~~ DEN BESTE TRANSP.
~~P.O. Box 113~~
~~Joplin, MO 64802~~ 820 DENBESTE CT, WINDSOR, CA 95492
T.D.

EPA I.D. NUMBER
MOD-09-503-8998

SHIPPING DATE
11/14/12

CONTACT
~~Cassie Gardner~~ Lori Den Beste

TELEPHONE (Include Area Code)
~~1-800-248-8768~~ 707 838 1407

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

DATE
11/14/12

7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A 1 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages)
USNB2009-028-EMC-02

9. CONSIGNEE - Name and Facility
Environmental Management and Controls
3106 South Faith Home Road
Turlock, CA 95380

CONTACT
Gaye Nelson

TELEPHONE (Include Area Code)
209-667-1102

SIGNATURE -- *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE
Howard Dees

TITLE
Den Bleker

DATE
11/14/12

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
NON-REGULATED BY DEPARTMENT OF TRANSPORTATION-RADIOLOGICALLY CONTAMINATED AQUEOUS SOLUTION	NA	NA	liquid OXIDES	Ra-228 Sr-90	1.3209E-01	3.5700E-03	NA	560 LBS; 7.5 FT3	USNB2009-028-EMC-09
Aqueous Liquid									
NON-REGULATED BY DEPARTMENT OF TRANSPORTATION-RADIOLOGICALLY CONTAMINATED AQUEOUS SOLUTION	NA	NA	liquid OXIDES	Ra-228 Sr-90	1.3209E-01	3.5700E-03	NA	560 LBS; 7.5 FT3	USNB2009-028-EMC-10
Aqueous Liquid									
UN2915 RADIOACTIVE MATERIAL, TYPE A PACKAGE, 7, Debris, Commodities	Yellow III	.4	SOLID OXIDES	Ra-226	9.1252E+01	2.4663E+00	NA	100 LBS; 7.5 FT3	USNB2009-028-EMC-13

FOR CONSIGNEE USE ONLY

20.

FORM 540 (08-03)

FORM 541

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
3	m3	0.8694	kg	553.3826	NP	NP	NP	NP
	ft3	30.7000	lb	1220.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)	
MBq	9.1517E+01	NP	NP	NP	NP	(kg)	NA
mCi	2.4734E+00	NP	NP	NP	NP	(lbs)	NA

2. MANIFEST NUMBER: USNB2009-028-EMC-02

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: EMS for BRAC PMO W-CSO, (LONG BEACH)

SHIPMENT ID NUMBER: USNB2009-028-EMC-02

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ S.C. TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	
USNB2009-028-EMC-09/USNB 2009-028	4-OP	0.3285	254.0117	<5.0000E-03	<3.6740E-06	<3.6740E-05	25	0.3285	100 100	OXIDES/NONE	NP	Ra-228	6.4750E-02	1.7500E-03	AU
												Sr-90	6.7340E-02	1.8200E-03	
		11.6000	560.0000	<5.0000E-01	<2.2000E+02	<2.2000E+03		11.6000				Subtotal	1.3209E-01	3.5700E-03	
												Total	1.3209E-01	3.5700E-03	
USNB2009-028-EMC-10/USNB 2009-028	4-OP	0.3285	254.0117	<5.0000E-03	<3.6740E-06	<3.6740E-05	25	0.3285	100 100	OXIDES/NONE	NP	Ra-228	6.4750E-02	1.7500E-03	AU
												Sr-90	6.7340E-02	1.8200E-03	
		11.6000	560.0000	<5.0000E-01	<2.2000E+02	<2.2000E+03		11.6000				Subtotal	1.3209E-01	3.5700E-03	
												Total	1.3209E-01	3.5700E-03	
USNB2009-028-EMC-13/USNB 2009-028	19 US DOT 7A TYPE A, METAL DRUM	0.2124	45.3592	1.2000E-01	<3.6740E-06	<3.6740E-05	59-DRY DEBRIS-H	0.3285	100 100	OXIDES/NONE	NP	Ra-226	9.1253E+01	2.4663E+00	AU
												Subtotal	9.1253E+01	2.4663E+00	
		7.5000	100.0000	1.2000E+01	<2.2000E+02	<2.2000E+03		11.6000				Total	9.1253E+01	2.4663E+00	
Shipment Totals		0.8694	553.3826										9.1517E+01	2.4734E+00	
		30.7000	1220.0000												

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6, or additional page

Note 1A: Barnwell Specific Container Description Codes. (Choose one code as may be applicable.)

A High Integrity Container - Poly
B High Integrity Container - Poly with Steel Shell
C High Integrity Drum Overpack - Poly
D High Integrity Container - Stainless Steel
E High Integrity Container - Fiberglass
F Liner - Steel

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11, or additional page

NOTE 2A: Barnwell Specific Waste Descriptor Codes. (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED.

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in item 13, or additional page
100. None Required.

Note 3A: Barnwell Specific Solidification and Stabilization Media Codes. (Choose this code if applicable)

M Wax Binder

FORM 541 (08-03)

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
ISOTOPES REPORT

For Manifest # USNB2009-028-EMC-02

	Total Activity	
Isotope	**(MBq)**	**(mCi)**
Ra-226	9.1252E+01	2.4663E+00
Ra-228	1.2950E-01	3.5000E-03
Sr-90	1.3468E-01	3.6400E-03

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ATTACHMENT 2

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EMS ENVIRONMENTAL MANAGEMENT SERVICES, INC.

150 North Wiget Lane, Suite 101, Walnut Creek, CA 94598
Phone: (925) 939-0687 Fax: (925) 938-0105

12/05/12

Manifest Supervisor
Perma-Fix, Northwest
2025 Battelle Blvd
Richland, WA 99354

Subject: Shipment paperwork corrections, Shipment numbers USNB2009-028-PFXN-01,

EMS made the above referenced shipments on 11/14/12 from Long Beach, which arrived at your facility on or about11/16/12. EMS requests that you correct the shipment paperwork to reflect a updated shipment number (an obsolete shipment number was used inadvertently) The new shipment number is **USN2010-055,** please make the necessary corrections on all shipment paperwork as required to assure the material can be tracked from processor to disposal site.

I have attached a spreadsheet below to assist in the process.

Original Shipment Documentation			Needed Corrections	
Shipment #	Date shipped	Drum #'s	Correction	Affected documents
USNB2009-028-PFXNW-01	11/14/2012	**6**	1) Change shipment number from USNB 2009-028 to USN 2010-055	NRC-540/541, SW Export Permit, uniform manifest

I apologize for any inconvenience this may have caused.

Sincerely,
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

Thomas J. Dias
Senior Broker

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Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA8170023100
2. Page 1 of: 1
3. Emergency Response Phone: 800-424-9300 CHEMTREC
4. Manifest Tracking Number: 008913655 JJK

GENERATOR

5. Generator's Name and Mailing Address
US NAVY BRAC, PMO-WV (LB)
1 PALM AVE, SUITE 161, SAN FRANCISCO, CA 94130
Generator's Phone: 415-743-4713 attn: Douglas DeLong

Generator's Site Address (if different than mailing address)
3978 Nimitz Rd 300 feet past at the end of the pier
Long Beach, CA 90802

6. Transporter 1 Company Name: Denbeste PH: 707-838-1407
U.S. EPA ID Number: CAD982513853

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
PERMA-FIX North West
2025 Battelle Blvd
Richland, Wa 99354
Facility's Phone: 509 375-5100
U.S. EPA ID Number: WAR000010365

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
RQ	1. UN3077, WASTE, Environmentally Hazardous Substance n.o.s. 9, PGIII, (Soil, D008)	1	DM	750 55 00	Lbs	D008		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
PROFILE NUMBER (2012-USNB-0001)
ERG GUIDE 161 (ATTACHED)
SHIPMENT # USNB 2009-029-PFXN-01
DOCUMENT # LB-8136

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: DOUGLAS DELONG
Signature: ON BEHALF OF
Month: 11 Day: 14 Year: 12

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tim Sheard
Signature:
Month: 11 Day: 14 Year: 12

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H 111			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: DAKIN R UTLEY
Signature:
Month: 11 Day: 16 Year: 12

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
ISOTOPES REPORT

For Manifest # USNB2009-028-PFXNW-1

Isotope	Total Activity (MBq)	(mCi)
Ac-228	1.3052E-02	3.5276E-04
Bi-212	7.1728E-03	1.9386E-04
Bi-214	1.4934E-02	4.0361E-04
K-40	2.0813E-01	5.6251E-03
Pb-212	1.2699E-02	3.4322E-04
Pb-214	1.6462E-02	4.4492E-04
Ra-226	1.4934E-02	4.0361E-04
Sr-90	9.7595E-03	2.6377E-04
Th-232	1.3052E-02	3.5276E-04
Th-234	1.9990E-02	5.4026E-04
Tl-208	4.7034E-03	1.2712E-04

Perma-Fix Northwest, Inc.

2025 Battelle Blvd.
Richland, WA 99352
Telephone:(509) 375-5160
FAX: (509) 375-0613

November 16, 2012

US NAVY BRAC, PMO-W (LB)
1 Palm Ave, Suite 161
San Francisco, CA 94130

Douglas Delong:

In compliance with the requirements of 10 CFR 20, Appendix G, Section III, C.1, the attached-signed shipping manifest copy is your notice of receipt and acceptance of the mixed waste materials specified on the manifest. Manifest number 008913655 JJK/ USNB 2009-028-PFXN-01 received on November 16, 2012 has been assigned our receipt number MWR12-126.

This is an acknowledgement of receipt only. Any discrepancies found during unloading will be processed at a later date.

Thank you for your business.
Sincerely,

Dakin Utley
Technical Projects Lead
Perma-Fix Northwest

Enclosure(s)

UHWM
Forms 540, 541

RADIOACTIVE WASTE SHIPMENT CERTIFICATION FOR SHIPMENTS TO THE COMMERCIAL RADIOACTIVE WASTE DISPOSAL FACILITY OR RADIOACTIVE WASTE PROCESSOR

The following certification, completed as applicable, is made to the state of Washington:

Certification is hereby made to the state of Washington that the radioactive waste described on manifest/bill of lading No._____ has been inspected and it has been determined that the materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable federal and state regulations, laws, rules, and licenses.

The undersigned shall indemnify and hold harmless the State of Washington from any and all claims, suits, losses, charges, and expenses on account of injuries to any and all persons whomsoever, and any and all property damage arising or growing out of or in any manner connected with this shipment to the extent that the claims, suits, losses, charges, or expenses are caused in whole or in part by negligent acts or omissions of the undersigned.[1]

Except for any violation of applicable state or federal statute or regulation or license condition respecting packaging and shipment, inspection and acceptance of any item or container or material covered by this certification by the State of Washington or a duly authorized contractor shall release the party who executed this certificate from any and all requirements of indemnification and hold harmless from injury or loss.

SECTION A:

GENERATOR: US Navy BRAC, PMO (Long Beach)
(Company or Agency Name)

PERMIT NUMBER: N/A

VOLUME OF WASTE IN THIS SHIPMENT: 7.5 Cu.Ft.

BY: Thomas J. Dirks for MC (Printed Name) TITLE: Sr. Broker

SIGNATURE: Thomas J. Dirks DATED: 11/14/12

SECTION B:

BROKER: EMS, For US Navy BRAC, PMO (Long Beach)
(Company Name)

PERMIT NUMBER: B-444

VOLUME OF WASTE IN THIS SHIPMENT: 7.5 Cu.Ft.

BY: Thomas J. Dirks (Printed Name) TITLE: Sr. Broker

SIGNATURE: Thomas J. Dirks DATED: 11/14/12

SECTION C:

CARRIER: Dawbert Transp for US Navy BRAC, PMO (Long Beach)
(Company Name)

VOLUME OF WASTE IN THIS SHIPMENT: 7.5 Cu.Ft.

BY: x Tim Silver (Printed Name) TITLE: x Driver

SIGNATURE: [signature] DATED: 11-14-12

DOH RHF-31D
Updated 3/01

[1] Federal government agencies entering into this certification are subject to all applicable federal law including, but not limited to, the Federal Tort Claims Act and the Anti-Deficiency Act.

1 In Column 1 identify all USEPA hazardous waste codes that apply to this waste shipment.
2 In Column 2, choose the appropriate treatability group: Non-Wastewater (NWW) or Wastewater (WW).
3 In Column 3, enter the appropriate Subcategory, if applicable, and also enter "Contaminated Soil" or "Debris" if the waste can be treated using one of the alternative treatment technologies provided by 268.49(c) (soil) or 268.45 (debris).
4 In Column 4, circle the letter of the appropriate LDR management categories on the back of this form.
5 In Column 5, enter the Reference Number(s) from the LDR-UHC Constituent Table for any constituents subject to treatment in your waste stream.

Go to LDR-UHC Contituent Table

Manifest Line Item #	1. USEPA HAZARDOUS WASTE CODES	2. NWW or WW		3. SUBCATEGORY	4. HOW MUST THE WASTE BE MANAGED (Check one) A	B	C	D	E	F	G	H	Soil Only					5. REFERENCE NUMBER(s) of Hazardous Constituents contained in the waste.
	D008	x	NWW	Toxicity Characteristic	x								Does			is subject to		204, 209
			WW										Does Not			complies with		
			NWW										Does			is subject to		
			WW										Does Not			complies with		
			NWW										Does			is subject to		
			WW										Does Not			complies with		
			NWW										Does			is subject to		
			WW										Does Not			complies with		

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Thomas J. Dias	Thomas J. Dias	Senior Broker	8/7/12
Generator Name		Title	Date

A. THIS RESTRICTED WASTE REQUIRES TREATMENT TO THE APPLICABLE STANDARD. This waste must be treated to the applicable performance based treatment standard set forth in 40CFR Part 268 Subpart C, 268.32, Subpart D, 268.40 or RCRA Section 3004(d) prior to land disposal.

B. THIS HAZARDOUS DEBRIS MAY BE TREATED USING THE DEBRIS ALTERNATIVE TREATMENT STANDARDS OF 40 CFR 268.45. I certify under penalty of law that I personally have examined and am familiar with the waste and that the statement above is true and that thiswaste meets the definition of debris and can be treated using the alternate methods specified in 40 CFR 268.45. I am aware that there are significant penalties for submitting a false certification including possibility of fine or imprisonment.

C. THIS RESTRICTED WASTE HAS BEEN TREATED TO THE APPLICABLE TREATMENT STANDARD(S). I certify under penalty of law that I personnaly have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

D. THIS RESTRICTED DEBRIS HAS BEEN TREATED IN ACCORDANCE WITH 40 CFR 268.45. I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR 268.45. 1 am aware that there are significant penalties for making false certification, including the possibility of a fine and imprisonment.

E. THIS LAB PACK DOES NOT CONTAIN ANY WASTES IDENTIFIED AT APPENDIX IV TO PART 268. I certify under penalty of law that I personally have examined and am familiar with the waste and that the statement above is true and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR 268.42(c). I am aware that there are significant penalties for submitting a false certification including possibility of fine or imprisonment.

F. THIS RESTRICTED WASTE HAS BEEN TREATED TO REMOVE THE HAZARDOUS CHARACTERISTIC. I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

G. THIS RESTRICTED WASTE HAS BEEN TREATED TO REMOVE THE HAZARDOUS CHARACTERISTIC AND BEEN TREATED FOR UNDERLYING HAZARDOUS CONSTITUENTS. I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in 268.48 Universal Treatment Standards. I am aware that there are significant, penalties for submitting false certification, including the possibility of fine and imprisonment.

H. THIS RESTRICTED WASTE IS SUBJECT TO AN EXEMPTION FROM LAND DISPOSAL. (Please include the date the waste is subject to the prohibitions in Column 5) This waste is subject to an exemption from a prohibition on the type of land disposal method utilized for the waste (such as, but not limited to, a case-by-case extension under 40 CFR Part 268.5, or an exemption under 40 CFR 268.6.

S. THIS CONTAMINATED SOIL ***(DOES / DOES NOT)*** CONTAIN LISTED HAZARDOUS WASTE AND ***(DOES / DOES NOT)*** EXHIBIT A CHARACTERISTIC OF HAZARDOUS WASTE AND ***(IS SUBJECT TO / COMPLIES WITH)*** THE SOIL TREATMENT STANDARDS AS PROVIDED BY 268.49(c) OR THE UNIVERSAL TREATMENT STANDARDS. I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it his been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Resource Guide
Underlying Hazardous Constituent (UHC)
Land Disposal Restriction (LDR) Constituents

					Concentration			
Ref #:	Hazardous Constituent	CAS NO.	NWW (mg/kg)	WW (mg/kg)	*11a*	*11b*	*11c*	*11d*
1	Acenaphthene	83-32-9	3.4	0.059				
2	Acenaphthylene	208-96-8	3.4	0.059				
3	Acetone	67-64-1	160	0.28				
4	Acetonitrile	75-05-8	38	5.6				
5	Acetophenone	96-86-2	9.7	0.01				
6	2-Acetylaminofluorene	53-96-3	140	0.059				
7	Acrolein	107-02-8	NA	0.29				
8	Acrylonitrile	107-13-1	84	0.24				
9	Acrylamide	79-06-1	23	19				
10	Aldrin	309-00-2	0.066	0.021				
11	4-Aminobiphenyl	92-67-1	NA	0.13				
12	Aniline	62-53-3	14	0.81				
13	Anthracene	120-12-7	3.4	0.059				
14	Aramite	140-57-8	NA	0.36				
15	alpha-BHC	319-84-6	0.066	0.00014				
16	beta-BHC	319-85-7	0.066	0.00014				
17	delta-BHC	319-86-8	0.066	0.023				
18	gamma-BHC (Lindane)	58-89-9	0.066	0.0017				
19	Benz(a)anthracene	56-55-3	3.4	0.059				
20	Benzal chloride	98-87-3	6	0.055				
21	Benzene	71-43-2	10	0.14				
22	Benzo(a)pyrene	50-32-8	3.4	0.061				
23	Benzo(b)fluoranthene	205-99-2	6.8	0.11				
24	Benzo(k)fluoranthene	207-08-9	6.8	0.11				
25	Benzo(g,h,i)perylene	191-24-2	1.8	0.0055				
26	bis(2-Chloroethoxy)methane	111-91-1	7.2	0.036				
27	bis(2-Chloroethyl)ether	111- 44-4	6	0.033				
28	bis(2-Chloroisopropyl) ether	39638-32-9	7.2	0.055				
30	Bromodichloromethane	75-27-4	15	0.35				
31	Bromomethane (Methyl bromide)	74-83-9	15	0.11				
32	4-Bromophenyl phenyl ether	101-55-3	15	0.055				
33	n-Butyl alcohol	71-36-3	2.6	5.6				
34	Butyl benzyl phthalate	85-68-7	28	0.017				
35	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	2.5	0.066				
36	Carbon disulfide	75-15-0	4.8*	3.8				
37	Carbon tetrachloride	56-23-5	6	0.057				
38	Chlordane (alpha and gamma isomers)	57-74-9	0.26	0.0033				
39	p-Chloroaniline	106-47-8	16	0.46				
40	Chlorobenzene	108-90-7	6	0.057				
41	Chlorobenzilate	510-15-6	NA	0.1				
42	2-Chloro-1, 3-butadiene (Chloroprene)	126-99-8	0.28	0.057				
43	Chlorodibromomethane	124-48-1	15	0.057				
44	Chloroethane	75-00-3	6	0.27				
45	Chloroform	67-66-3	6	0.046				
46	p-Chloro-m-cresol	59-50-7	14	0.018				
47	2-Chloroethyl vinyl ether	110-75-8	NA	0.062				
48	Chloromethane (Methyl chloride)	74-87-3	30	0.19				
49	2-Chloronaphthalene	91-58-7	5.6	0.055				
50	2-Chlorophenol	95-57-8	5.7	0.044				
51	3-Chloropropylene (Allyl Chloride)	107-05-1	30	0.036				
52	Chrysene	218-01-9	3.4	0.059				
53	o-Cresol (2-Methyl phenol)	95-48-7	5.6	0.11				
54	m-Cresol (3-Methyl phenol)	108-39-4	5.6	0.77				

					Concentration			
Ref #:	Hazardous Constituent	CAS NO.	NWW (mg/kg)	WW (mg/kg)	11a	11b	11c	11d
55	p-Cresol (4-Methyl phenol)	106-44-5	5.6	0.77				
56	Cyclohexanone	108-94-1	0.75 *	0.36				
57	o,p'-DDD	53-19-0	0.087	0.023				
58	p,p'-DDD	72-54-8	0.087	0.023				
59	o,p'-DDE	3424-82-6	0.087	0.031				
60	p,p'-DDE	72-55-9	0.087	0.031				
61	o,p'-DDT	789-02-6	0.087	0.0039				
62	p,p'-DDT	50-29-3	0.087	0.0039				
63	Dibenz(a,h)anthracene	53-70-3	8.2	0.055				
64	Dibenz(a,e)pyrene	192-65-4	NA	0.061				
65	1,2-Dibromo-3-chloropropane	96-12-8	15	0.11				
66	1,2-Dibromoethane (Ethylene dibromide)	106-93-4	15	0.028				
67	Dibromomethane	74-95-3	15	0.11				
68	m-Dichlorobenzene (1,3-Dichlorobenzen	541-73-1	6	0.036				
69	o-Dichlorobenzene (1,2-Dichlorobenzene	95-50-1	6	0.088				
70	p-Dichlorobenzene (1,4-Dichlorobenzene	106-46-7	6	0.09				
71	Dichlorodifluoromethane	75-71-8	7.2	0.23				
72	1,1-Dichloroethane	75-34-3	6	0.059				
73	1,2-Dichloroethane	107-06-2	6	0.21				
74	1,1-Dichloroethylene	75-35-4	6	0.025				
75	trans-1,2-Dichloroethylene	156-60-5	30	0.054				
76	2,4-Dichlorophenol	120-83-2	14	0.044				
77	2,6-Dichlorophenol	87-65-0	14	0.044				
78	2,4-Dichlorophenoxyacetic acid (2.4-D)	94-75-7	10	0.72				
79	1,2-Dichloropropane	78-87-5	18	0.85				
80	cis-1,3-Dichloropropylene	10061-01-5	18	0.036				
81	trans-1,3-Dichloropropylene	10061-02-6	18	0.036				
82	Dieldrin	60-57-1	0.13	0.017				
83	Diethyl phthalate	84-66-2	28	0.2				
84	p-Dimethylaminoazobenzene	60-11-7	NA	0.13				
85	2,4-Dimethyl phenol	105-67-9	14	0.036				
86	Dimethyl phthalate	131-11-3	28	0.047				
87	Di-n-butyl phthalate	84-74-2	28	0.057				
88	1,4-Dinitrobenzene	100-25-4	2.3	0.32				
89	4,6-Dinitro-o-cresol	534-52-1	160	0.28				
90	2,4-Dinitrophenol	51-28-5	160	0.12				
91	2,4-Dinitrotoluene	121-14-2	140	0.32				
92	2,6-Dinitrotoluene	606-20-2	28	0.55				
93	Di-n-octyl phthalate	117-84-0	28	0.017				
94	Di-n-propylnitrosamine	621-64-7	14	0.4				
95	1,4-Dioxane	123-91-1	170	12				
96	Diphenylamine	122-39-4	13	0.92				
97	Diphenylnitrosamine	86-30-6	13	0.92				
98	1,2-Diphenylhydrazine	122-66-7	NA	0.087				
99	Disulfoton	298-04-3	6.2	0.017				
100	Endosulfan I	959-98-9	0.066	0.023				
101	Endosulfan II	33213-65-9	0.13	0.029				
102	Endosulfan sulfate	1031-07-8	0.13	0.029				
103	Endrin	72-20-8	0.13	0.0028				
104	Endrin aldehyde	7421-93-4	0.13	0.025				
105	2-Ethoxyethanol (FO05)+			INCIN				
106	Ethyl acetate	141-78-6	33	0.34				
107	Ethyl benzene	100-41-4	10	0.057				
108	Ethyl ether	60-29-7	160	0.12				
109	Ethyl methacrylate	97-63-2	160	0.14				
110	Ethylene oxide	75-21-8	NA	0.12				
111	Famphur	52-85-7	15	0.017				

Ref #:	Hazardous Constituent	CAS NO.	NWW (mg/kg)	WW (mg/kg)	Concentration 11a	11b	11c	11d
112	Fluoranthene	206-44-0	3.4	0.068				
113	Fluorene	86-73-7	3.4	0.059				
114	Heptachlor	76-44-8	0.066	0.0012				
115	Heptachlor epoxide	1024-57-3	0.066	0.016				
116	Hexachlorobenzene	118-74-1	10	0.055				
117	Hexachlorobutadiene	87-68-3	5.6	0.055				
118	Hexachlorocyclopentadiene	77-47-4	2.4	0.057				
119	HxCDDs (All Hexachlorodibenzo-p-dioxin	NA	0.001	0.000063				
120	HxCDFs (All Hexachlorodibenzofurans)	NA	0.001	0.000063				
121	Hexachloroethane	67-72-1	30	0.055				
122	Hexachloropropylene	1888-71-7	30	0.035				
123	Indeno (1,2,3-c,d) pyrene	193-39-5	3.4	0.0055				
124	Iodomethane	74-88-4	65	0.19				
125	Isobutyl alcohol (Isobutanol)	78-83-1	170	5.6				
126	Isodrin	465-73-6	0.066	0.021				
127	Isosafrole	120-58-1	2.6	0.081				
128	Kepone	143-50-0	0.13	0.0011				
129	Methacrylonitrile	126-98-7	84	0.24				
130	Methanol	67-56-1	0.75 *	5.6				
131	Methapyrilene	91-80-5	1.5	0.081				
132	Methoxychlor	72-43-5	0.18	0.25				
133	3-Methylchloroanthrene	56-49-5	15	0.0055				
134	4,4-Methylene bis (2-chloroaniline)	101-14-4	30	0.5				
135	Methylene chloride	75-09-2	30	0.089				
136	Methyl ethyl ketone	78-93-3	36	0.28				
137	Methyl isobutyl ketone	108-10-1	33	0.14				
138	Methyl methacrylate	80-62-6	160	0.14				
139	Methyl methanesulfonate	66-27-3	NA	0.018				
140	Methyl parathion	298-00-0	4.6	0.014				
141	Naphthalene	91-20-3	5.6	0.059				
142	2-Naphthylamine	91-59-8	N/A	0.52				
143	o- Nitroaniline	88-74-4	14	0.27				
144	p-Nitroaniline	100-01-6	28	0.028				
145	Nitrobenzene	98-95-3	14	0.068				
146	5-Nitro-o-toluidine	99-55-8	28	0.32				
147	o-Nitrophenol	88-75-5	13	0.028				
148	p-Nitrophenol	100-02-7	29	0.12				
149	2-Nitropropane (FO05)+			INCIN				
150	N-Nitrosodiethylamine	55-18-5	28	0.4				
151	N-Nitrosodimethylamine	62-75-9	2.3	0.4				
152	N-Nitroso-di-n-butylamine	924-16-3	17	0.4				
153	N-Nitrosomethylethylamine	10595-95-6	2.3	0.4				
154	N-Nitrosomorpholine	59-89-2	2.3	0.4				
155	N-Nitrosopiperidine	100-75-4	35	0.013				
156	N-Nitrosopyrrolidine	930-55-2	35	0.013				
157	Parathion	56-38-2	4.6	0.014				
158	Total PCBs	1336-36-3	10	0.1				
159	Pentachlorobenzene	608-93-5	10	0.055				
160	PeCDDs (All Pentachlorodibenzo-p-dioxi	NA	0.001	0.000063				
161	PeCDFs (All Pentachlorodibenzofurans)	NA	0.001	0.000035				
162	Pentachloroethane	76-01-7	6	0.055				
163	Pentachloronitrobenzene	82-68-8	4.8	0.055				
164	Pentachlorophenol	87- 86-5	7.4	0.089				
165	Phenacetin	62-44-2	16	0.081				
166	Phenanthrene	85-01-8	5.6	0.059				
167	Phenol	108-95-2	6.2	0.039				
168	Phorate	298-02-2	4.6	0.021				

Ref #:	Hazardous Constituent	CAS NO.	NWW (mg/kg)	WW (mg/kg)	Concentration 11a	11b	11c	11d
169	Phthalic acid	100-21-0	28	0.055				
170	Phthalic anhydride	85-44-9	28	0.055				
171	Pronamide	23950-58-5	1.5	0.093				
172	Propanenitrile (Ethyl cyanide)	107-12-0	360	0.24				
173	Pyrene	129-00-0	8.2	0.067				
174	Pyridine	110-86-1	16	0.014				
175	Safrole	94-59-7	22	0.081				
176	Silvex (2,4,5-TP)	93-72-1	7.9	0.72				
177	1,2,4,5-Tetrachlorobenzene	95-94-3	14	0.055				
178	TCDDs (All Tetachlorodibenzo-p-dioxins)	NA	0.001	0.000063				
179	TCDFs (All Tetrachlorodibenzofurans)	NA	0.001	0.000063				
180	1,1,1,2-Tetrachloroethane	630-20-6	6	0.057				
181	1, 1,2,2-Tetrachloroethane	79-34-5	6	0.057				
182	Tetrachloroethylene	127-18-4	6	0.056				
183	2,3,4,6-Tetrachlorphenol	58-90-2	7.4	0.03				
184	Toluene	108-88-3	10	0.08				
185	Toxaphene	8001-35-2	2.6	0.0095				
186	Tribromomethane (Bromoform)	75-25-2	15	0.63				
187	1,2,4-Trichlorobenzene	120-82-1	19	0.055				
188	1, 1, 1 -Trichloroethane	71-55-6	6	0.054				
189	1, 1,2-Trichloroethane	79-00-5	6	0.054				
190	Trichloroethylene	79-01-6	6	0.054				
191	Trichloromonofluoromethane	75-69-4	30	0.02				
192	2,4,5-Trichlorophenol	95-95-4	7.4	0.18				
193	2,4,6-Trichlorophenol	88-06-2	7.4	0.035				
194	2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	7.9	0.72				
195	1,2,3-Trichloropropane	96-18-4	30	0.85				
196	1,1,2-Trichloro- 2,2,2-trifluoroethane	76-13-1	30	0.057				
197	tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.1	0.011				
198	Vinyl chloride	75-01-4	6	0.27				
199	Xylenes	1330-20-7	30	0.32				
200	Antimony	7440-36-0	1.15*	1.9				
201	Arsenic	7440-38-2	5.0 *	1.4				
202	Barium	7440-39-3	21 *	1.2				
203	Beryllium	7440-41-7	1.22 *	0.82				
204	Cadmium	7440-43-9	0.11 *	0.69	0.173	mg/L TCLP		
205	Chromium (Total)	7440-47-3	0.60 *	2.77				
206	Cyanides (Total)	57-12-5	590	1.2				
207	Cyanides (Amenable)	57-12-5	30	0.86				
208	Fluoride	16984-48-8	NA	35				
209	Lead	7439-92-1	0.75 *	0.69	11.9	mg/L TCLP		
210	Mercury (retort residues)	7439-97-6	0.2 *	NA				
211	Mercury (all others)	7439-97-6	0.025 *	0.15				
212	Nickel	7440-02-0	11 *	3.98				
213	Selenium	7782-49-2	5.7 *,**	0.82				
214	Silver	7440-22-4	0.14	0.43				
215	Sulfide	18496-25-8	NA	14				
216	Thallium	7440-28-0	0.2	1.4				
217	Vanadium	7440-62-2	1.6*,**	4.3				
218	Zinc	7440-66-6	4.3*,**	2.61				
220	Aldicarb sulfone	1646-88-4	0.28	0.056				
221	Barban	101-27-9	1.4	0.056				
222	Bendiocarb	22781-23-3	1.4	0.056				
224	Benomyl	17804-35-2	1.4	0.056				
225	Butylate	2008-41-5	1.4	0.042***				
226	Carbaryl	63-25-2	0.14	0.006				
227	Carbenzadim	10605-21-7	1.4	0.056				

Ref #:	Hazardous Constituent	CAS NO.	NWW (mg/kg)	WW (mg/kg)	Concentration 11a	11b	11c	11d
228	Carbofuran	1563-66-2	0.14	0.006				
229	Carbofuran phenol	1563-38-8	1.4	0.056				
230	Carbosulfan	55285-14-8	1.4	0.028				
231	m-Cumenyl methylcarbamate	64-00-6	1.4	0.056				
233	Diethylene glycol, dicarbamate	5952-26-1	1.4	0.056				
235	Dithiocarbarnates (total)	137-30-4	28	0.028				
236	EPTC	759-94-4	1.4	0.042				
237	Formetanate hydrochloride	23422-53-9	1.4	0.056				
241	Methiocarb	2032-65-7	1.4	0.056				
242	Methomyl	16752-77-5	0.14	0.028				
243	Metolcarb	1129-41-5	1.4	0.056				
244	Mexacarbate	315-18-4	1.4	0.056				
245	Molinate	2212-67-1	1.4	0.042				
246	Oxarnyl	23135-22-0	0.28	0.056				
247	Pebulate	1114-71-2	1.4	0.042				
249	Physostigmine	57-47-6	1.4	0.056				
250	Physostigmine salicylate	57-64-7	1.4	0.056				
251	Prornecarb	2631-37-0	1.4	0.056				
252	Propharn	122-42-9	1.4	0.056				
253	Propoxur	114-26-1	1.4	0.056				
254	Prosulfocarb	52888-80-9	1.4	0.042				
255	Thiodicarb	59669- 26-0	1.4	0.019				
256	Thiophanate-methyl	23564-05-8	1.4	0.056				
258	Triallate	2303-17-5	1.4	0.042				
259	Triethylamine	101-44-8	1.5	0.081				
260	Vernolate	1929-77-7	1.4	0.042				

* "Concentration in mg/l TCLP"

** Not Underlying Hazardous Constituents. (See 60 FR, Jan. 3,1995)

*** The preamble to the final rule (61 FR 15584) clearly indicates that the wastewater treatment standard for thiocarbamate constituents has been revised to 0.042mg/l. However, the '268.48 universal treatment standards table still shows 0.003 mg/l.

I These UTS levels are effective on August 24, 1998 as established in 63 FIR 28556-28753, the finalized Phase IV-Part 2 land disposal restrictions (LDR) rule.

IMPORTANT NOTICE.....PLEASE READ

2025 Battelle Blvd.
Richland, WA 99354
509-375-7046
Fax: 509-371-1040

Perma-Fix Northwest, Inc

Hazardous Material Driver....

If you are to pick-up or are carrying material to Perma-Fix Northwest, Inc. Low Level Operations, in Richland, Washington, you must enter the State of Washington at one of the two entry points listed below and stop for an inspection of your vehicle to insure compliance with the Washington State Department of Transportation requirements for vehicles carrying or to carry hazardous materials. You will not be allowed entry in the State until your vehicle passes this inspection. **You will not be allowed to unload or load up at Perma-Fix Northwest unless your vehicle has a certificate of inspection from one of these checkpoints.**

Weigh Station at Plymouth (I-82)	**Phone: 509-734-7043**
I-90 near Spokane	**Phone: 509-838-9400**

You must notify one of the above checkpoints by phone at least 4 hours prior to entering the State. A personal monetary fine of $100.00 will be levied by the State of Washington for failure to stop at one of the above checkpoints. A lengthy delay may also be expected in addition to the $100.00 fine.

STATEMENT OF CERTIFICATION

I have read and understand the above statements concerning the proper delivery or pick-up of radioactive materials.

11/14/12 _____

Date Signature of Driver

Shipment Number: USNB 2009-028-PFXN-01

Mixed Waste Pre-Shipment Notification Form

PFNW

Shipment Approval Number: TBD MWA 12-[illegible]

1. Broker/ Shipper	Thomas J. Dias	7. Shipper Telephone	510-828-4962
2. Client	U.S. Navy BRAC, PMO-W (Long Beach)	[illegible]	Doug Delong
3. Carrier	Tri-State Motor Transit	9. [illegible] Telephone	510-772-6832
[illegible]	TBD	10. [illegible]	
[illegible] Ship Date	TBD	11. [illegible] Shipping Name	
[illegible] Arrival Date	TBD		UN3077, Environmentally hazardous substance n.o.s. (D008)

12. Hazardous Waste Description (include all hazardous waste codes applicable to the shipment)

IDW Soil from characterization activities, contains Radionuclides, and RCRA quantities of Lead and UHC for Cadmium (D008)

13. List All Isotopes and Total Activity of Each Container (computer generated shipment summary sheet may be used)

Isotope	Activity		Isotope	Activity		Isotope	Activity	
Ac-228	3.63E-04	mCi	Th-234	5.40E-04	mCi			mCi
Bi-212	1.94E-04	mCi	Tl-208	1.27E-04	mCi			mCi
Bi-214	4.04E-04	mCi			mCi			mCi
K-40	5.63E-03	mCi			mCi			mCi
Pb-212	8.43E-04	mCi			mCi			mCi
Pb-214	4.46E-04	mCi			mCi			mCi
Ra-226	4.04E-04	mCi			mCi			mCi
Sr-90	2.64E-04	mCi			mCi			mCi
Th-232	3.63E-04	mCi			mCi	Total	9.06E-03	mCi

14. Total SNM for Shipment (Grams)	NP	Gm	15. Total Source for Shipment (Kgs)	3.21E-03
16. Shipment Net Volume (m3)			17. Shipment Gross Weight (Kgs)	340

18. [illegible]

19. [illegible]

[illegible]

11/13/12

PFNW Materials Control Manager or Designee   Date

21. Has a Waste Profile Sheet been submitted?	YES		NO
22. Waste Profile Number:	WP:	2012-USNB-0001	
23. Has Four Week Advance Notice been provided for receipt of out-of-state waste?	YES	N/A	NO
24. Has Written Notification of Authorization to Ship Waste been received?	YES		NO
25. Are you exporting from the Rocky Mountain Compact ?	YES		NO
26. If block 25 is yes, do you have an export permit ?	YES	N/A	NO
27. Are you declaring any part of this waste to be NORM, NARM or exempt ?	YES		NO
28. If block 28 is yes, do you have a determination letter ?	YES	N/A	NO
29. Have you completed a Washington State RHF-31 Form?	YES		NO
30. Container Activity Atomic #'s 84-103 greater than or equal to 100 mCi?	YES		NO
31. Discrete Source greater than or equal to 10 mCi?	YES		NO

33. End Disposition (circle one or more, if more than one specify in space provided below)

DOE Burial   ____________ Onsite generator   Energy Solutions Offsite Generator

Notice: [illegible]

1.) Weigh Station at Plymouth (I-82)   Phone (509) 734-7043

2.) Weigh Station at Spokane (I-90)   Phone (509) 533-2400

[illegible] A person[al] monetary fine of $100 may be levied for failure to stop at one of the above checkpoints. A [illegible] delay may also be imposed in addition to the $100 fine. Please make all drivers aware of these requirements before leaving your facility.

32. I hereby certify this form is complete to the best of my knowledge and the waste meets the requirements of the PFNW Mixed Waste Acceptance Criteria, Rev. 12. For waste that does not meet these criteria, variance approval has been received. Name of PFNW Representative approving the variance or NA.

Signature: Thomas J. Dias (signed)   Date: 10/22/12

Name (Print): Thomas J. Dias   Phone: 310-828-4962

This form is to be completed and sent to PermaFix NW, Richland WA, at least 5 days but no later than 48 hours prior to departure of your shipment. If a shipment arrives without a shipment approval number it may result in excessive delays and demurrage charges or possible return of the shipment to the generator.

FORM 540

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
800-424-9300

ORGANIZATION
CHEMTREC

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
☐ YES
☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> **1**

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☑ YES ☐ NO
If "Yes," provide Manifest Number =====>

EPA MANIFEST NUMBER
~~008913655 JJK~~ +1D
008913655 JJK

5. SHIPPER – NAME AND FACILITY
EMS for BRAC PMO W-CSO, (LONG BEACH)
1 AVE OF THE PALMS, SUITE 161
SAN FRANCISCO, CA 94130

SHIPPER I.D. NUMBER
USNB2009-028-PFXNW-1
☐ COLLECTOR
☐ PROCESSOR

~~NA~~ MWA 12-121
SHIPMENT NUMBER
USNB2009-028-PFXNW-1

☑ GENERATOR TYPE (Specify) **G**

CONTACT
THOMAS DIAS

TELEPHONE NUMBER (Include Area Code)
510-828-4962

6. CARRIER -- Name and Address
DenBeste Transportation, Inc.
820 DenBeste Court
Windsor, CA 95492

EPA I.D. NUMBER
CAD982513632

SHIPPING DATE
11/14/12

CONTACT
Lori DenBeste

TELEPHONE (Include Area Code)
707-838-1407

SIGNATURE – *Authorized carrier acknowledging waste receipt*

DATE
11/14/12

7. FORM 540 AND 540A **PAGE 1 OF 1 PAGE(S)**
FORM 541 AND 541A **1 PAGE(S)**
FORM 542 AND 542A **None PAGE(S)**
ADDITIONAL INFORMATION **None PAGE(S)**

8. MANIFEST NUMBER (Use this number on all continuation pages)
USNB2009-028-PFXNW-1

9. CONSIGNEE - Name and Facility
Perma-Fix Northwest
2025 Battelle Blvd.
Richland, Wa 99354

CONTACT
Chuck White

TELEPHONE (Include Area Code)
509-375-5160

SIGNATURE – *Authorized consignee acknowledging waste receipt*

DATE
11-16-12

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE
~~Thomas Dias~~

TITLE
Dr Broker

DATE
11/14/12

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES				16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
UN3077,Waste, Environmentally Hazardous Substance, Solid,n.o.s.,PGIII (Soil, D008)	**NA**	**NA**	**SOLID OXIDES**	**Ac-228**	**Bi-212**	**Bi-214**	**K-40**	**3.3489E-01**	**9.0510E-03**	**NA**	**750 LBS; 7.5 FT3**	**USNB2009-028-PFX-01**
				Pb-212	**Pb-214**	**Ra-226**	**Sr-90**					
				Th-232	**Th-234**	**Tl-208**						

FOR CONSIGNEE USE ONLY

20.

FORM 540 (08-03)

FORM 541

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3	0.2124	kg	340.1943	NP	NP	NP	NP
	ft3	7.5000	lb	750.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)	
MBq	3.3489E-01	NP	NP	NP	NP	(kg)	3.2069E-03
mCi	9.0510E-03	NP	NP	NP	NP	(lbs)	7.0700E-03

2. MANIFEST NUMBER: USNB2009-028-PFXNW-1

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: EMS for BRAC PMO W-CSO, (LONG BEACH)

SHIPMENT ID NUMBER: USNB2009-028-PFXNW-1

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER/ S.C. TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
USNB2009-028-PFX-01/USNB 2009-028	4	0.2124	340.1943	<5.0000E-03	<3.6740E-06	<3.6740E-05	22-H	0.2124	100 100	OXIDES/NONE	NP	Ac-228	1.3052E-02	3.5276E-04	AU
		7.5000	750.0000	<5.0000E-01	<2.2000E+02	<2.2000E+03		7.5000				Bi-212	7.1728E-03	1.9386E-04	
												Bi-214	1.4934E-02	4.0361E-04	
												K-40	2.0813E-01	5.6251E-03	
												Pb-212	1.2699E-02	3.4322E-04	
												Pb-214	1.6462E-02	4.4492E-04	
												Ra-226	1.4934E-02	4.0361E-04	
												Sr-90	9.7595E-03	2.6377E-04	
												Th-232 [3.2069E-03 kg]	1.3052E-02	3.5276E-04	
												Th-234 [2.3490E-14 kg]	1.9990E-02	5.4026E-04	
												Tl-208	4.7034E-03	1.2712E-04	
												Subtotal	3.3489E-01	9.0510E-03	
												Total	3.3489E-01	9.0510E-03	
												Source [3.2069E-03 kg]			
Shipment Totals		0.2124	340.1943									Source [3.2069E-03 kg]	3.3489E-01	9.0510E-03	
		7.5000	750.0000												

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6, or additional page

Note 1A: Barnwell Specific Container Description Codes. (Choose one code as may be applicable.)

A High Integrity Container - Poly
B High Integrity Container - Poly with Steel Shell
C High Integrity Drum Overpack - Poly
D High Integrity Container - Stainless Steel
E High Integrity Container - Fiberglass
F Liner - Steel

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11, or additional page

NOTE 2A: Barnwell Specific Waste Descriptor Codes. (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED.

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in item 13, or additional page
100. None Required.

Note 3A: Barnwell Specific Solidification and Stabilization Media Codes. (Choose this code if applicable)

M Wax Binder

FORM 541 (08-03)

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-99)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

98357087

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA6 1 7 0 0 2 3 1 0 9 | Manifest Document No. 0 0 0 0 1 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address
CARETAKER SITE OFFICE, LONG BEACH
PO BOX 444 EAST IRVINE, CA 92650-0444
4. Generator's Phone ~~(949) 726-6587~~ (619) 572-1403

A. State Manifest Document Number: 98357087
B. State Generator's ID:

5. Transporter 1 Company Name: R-R TRUCKING, INC
6. US EPA ID Number: M O R 0 0 0 5 0 1 9 7 3
C. State Transporter's ID:
D. Transporter's Phone: 800-625-6895

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
ENVIROCARE OF UTAH
INTERSTATE 80, EXIT 49
CLIVE, UT 84029
10. US EPA ID Number: U T D 9 8 2 5 9 8 8 9 8
G. State Facility's ID:
H. Facility's Phone: 435-884-0155

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. WASTE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, N.O.S., 7, UN2912, FISSILE EXCEPTED ~~(D008)~~	006	CM	4111810	P	State 351 611 EPA/Other D008
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
576 CUFT 21.33 cuyd LSA-I
3102-01-0001
USN 2001-016 "EXCLUSIVE USE SHIPMENT"

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
ERG #162
3102-01-M04882
24 HOUR EMERGENCY PHONE NO. 925-443-7967

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Ronald C Johnson
Signature:
Month 0 1 Day 1 1 Year 0 2

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jimmie D. Washington
Signature:
Month 0 1 Day 1 1 Year 0 2

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: J GARZA
Signature:
Month 0 1 Day 1 4 Year 0 2

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (4/97)
EPA 8700—22

DOT SHIPPING PAPER 1 of 6

White: TSDF SENDS THIS COPY TO DTSC WITHIN 30 DAYS.
To: P.O. Box 3000, Sacramento, CA 95812

DOT SHIPPING PAPER 2 of 6

EORM 540 — Envirocare of Utah, Inc.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (925) 443-7967

ORGANIZATION: New World Technology

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? [X] YES [ ] NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ======> 6

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? [X] YES [ ] NO
If "Yes," provide Manifest Number =====> EPA MANIFEST NUMBER: 98357087 / 00001

5. SHIPPER – NAME AND FACILITY
NWT for S.W. Div. Naval Facilities
P.O. Box 444
East Irvine, CA 92650 -0444

Utah Generator Site Access Permit No.: 0109800101
SHIPMENT NUMBER: 3102-01-0001

CONTACT: Mr. Willie Bremer
TELEPHONE NUMBER (Include Area Code): (925) 443-7967

6. CARRIER -- Name and Address
R & R Trucking
P.O. Box 545
Duenweg, MO 64841
TK 5798
TL 383004RR

CONTACT: Don Ritchie
TELEPHONE NUMBER (Include Area Code): 800-625-6885

SIGNATURE – Authorized carrier acknowledging waste receipt: Jim D. Waddle
DATE: 01-11-02

SHIPMENT I.D. NUMBER: USN 2001-016
[ ] COLLECTOR
[ ] PROCESSOR
[X] GENERATOR TYPE (Specify) G

EPA I.D. NUMBER: MOR-000-50-1973
SHIPPING DATE: 1/11/02

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 3 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 3102-01-0001

9. CONSIGNEE - Name and Facility Address
Envirocare of Utah, Inc.
Clive Disposal Site (Containerized Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029

CONTACT: Shipping and Receiving
TELEPHONE NUMBER (Include Area Code): (435)884-0155

SIGNATURE - Authorized consignee acknowledging waste receipt: [signature]
DATE: 1/14/02

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: Willie Bremer / Caryl DeLong
See consignee block below.
TITLE: Broker / Assistant Broker
DATE: 01/11/2002

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Waste, Radioactive material, low specific activity, n.o.s., 7, UN2912, Fissile excepted Soil	NA	NA	Solid /Oxide	K-40 Pu-239 Ra-226 Sr-90 Th-232 U-nat	2.1022E+01	5.6816E-01	LSA-I	7500. LBS; 96. FT3	LB-01-001
Waste, Radioactive material, low specific activity, n.o.s., 7, UN2912, Fissile excepted Soil	NA	NA	Solid /Oxide	K-40 Pu-239 Ra-226 Sr-90 Th-232 U-nat	1.8823E+01	5.0874E-01	LSA-I	6800. LBS; 96. FT3	LB-01-002
Waste, Radioactive material, low specific activity, n.o.s., 7, UN2912, Fissile excepted Soil	NA	NA	Solid /Oxide	K-40 Pu-239 Ra-226 Sr-90 Th-232 U-nat	2.0179E+01	5.4538E-01	LSA-I	7240. LBS; 96. FT3	LB-01-003
Waste, Radioactive material, low specific activity, n.o.s., 7, UN2912, Fissile excepted Soil	NA	NA	Solid /Oxide	K-40 Pu-239 Ra-226 Sr-90 Th-232 U-nat	2.0342E+01	5.4979E-01	LSA-I	7280. LBS; 96. FT3	LB-01-004
Waste, Radioactive material, low specific activity, n.o.s., 7, UN2912, Fissile excepted Soil	NA	NA	Solid /Oxide	K-40 Pu-239 Ra-226 Sr-90 Th-232 U-nat	2.2121E+01	5.9787E-01	LSA-I	7860. LBS; 96. FT3	LB-01-005
Waste, Radioactive material, low specific activity, n.o.s., 7, UN2912, Fissile excepted Debris	NA	NA	Solid /Oxide	K-40 Pu-239 Ra-226 Sr-90 Th-232 U-nat	1.1737E+01	3.1721E-01	LSA-I	4500. LBS; 96. FT3	LB-01-006

FOR CONSIGNEE USE ONLY

The original signed manifest resides with:
New World Technology
448 Commerce Way
Livermore, CA 94550
(925) 443-7967

SIGNED COPY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
✓ No Violations Detected on this Shipment.

20. TERMS AND CONDITION

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material ✓ is (or) ___ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc., and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah, Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (10-96)

DOT SHIPPING PAPER 3 of 6

FORM 541 — Envirocare of Utah, Inc.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	TOTAL
6	m3 16.3104	kg 16773.8469	NP	NP	2.7010E-06 6 Packages	2.7010E-06
	ft3 576.0000	ton 18.4900				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.1422E+02	NP	NP	NP	NP	(kgs)	1.0520E-01
mCi	3.0871E+00	NP	NP	NP	NP	(tons)	1.1596E-04

2. MANIFEST NUMBER: 3102-01-0001

3. PAGE 1 OF 3 PAGE(S)

4. SHIPPER NAME: NWT for S.W. Div. Naval Faciliti

SHIPMENT ID NUMBER: USN 2001-016

DISPOSAL CONTAINER DESCRIPTION / WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER / GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (ton)	9. SURFACE RADIATION LEVEL mSv/hr / mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 / dpm/100 cm2 ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
LB-01-001/USN 2001-016	2	2.7184	3401.9430	2.0000E-03	<1.6700E-06	<1.6700E-05	22-H	2.7184	100 100	Oxide/NP	NP	K-40	1.57800E+01	1.8019E+00	4.8700E-02	AU
		96.0000	3.7500	2.0000E-01	<1.000E+02	<1.000E+03		96.0000				Pu-239 [4.9700E-07 g]	1.00000E-02	1.1396E-03	3.0800E-05	
												Ra-226	3.88000E+01	4.4400E+00	1.2000E-01	
												Sr-90	6.49000E+00	7.8810E-01	2.1300E-02	
												Th-232 [1.9300E-02 kgs]	6.90000E-01	7.8810E-02	2.1300E-03	
												U-nat [2.6700E-07 kgs]	1.21810E+02	1.3912E+01	3.7600E-01	
												Subtotal		2.1022E+01	5.6816E-01	
												Total		2.1022E+01	5.6816E-01	
												SNM: [4.9700E-07 g] Source: [1.9300E-02 kgs]				
LB-01-002/USN 2001-016	2	2.7184	3084.4283	2.0000E-03	<1.6700E-06	<1.6700E-05	22-H	2.7184	100 100	Oxide/NP	NP	K-40	1.57800E+01	1.6169E+00	4.3700E-02	AU
		96.0000	3.4000	2.0000E-01	<1.000E+02	<1.000E+03		96.0000				Pu-239 [4.4600E-07 g]	1.00000E-02	1.0249E-03	2.7700E-05	
												Ra-226	3.88000E+01	3.9590E+00	1.0700E-01	
												Sr-90	6.49000E+00	7.0670E-01	1.9100E-02	
												Th-232 [1.7400E-02 kgs]	6.90000E-01	7.0670E-02	1.9100E-03	
												U-nat [2.3900E-07 kgs]	1.21810E+02	1.2469E+01	3.3700E-01	
												Subtotal		1.8823E+01	5.0874E-01	
												Total		1.8823E+01	5.0874E-01	
												SNM: [4.4600E-07 g] Source: [1.7400E-02 kgs]				

NOTE 1: Container Description Codes. For containers/ waste requiring disposal in approved structural overpacks the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in item 6, or additional page.

Note 1A: Bulk Packaging Description Codes (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-dump
D Roll-off
E Seavan

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11. or additional page

Note 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S" and the media vendor and brand name must also be identified in item 13. Code 100=NONE REQUIRED

Solidification
90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in item 13. or additional page
100. None Required.

FORM 541 (10-96)

DOT SHIPPING PAPER 4 of 6

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Envirocare of Utah, Inc.

2. MANIFEST NUMBER
3102-01-0001

3. PAGE 2 OF 3 PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION	
5. CONTAINER IDENTIFICATION NUMBER / GENERATOR IO NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (ton)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
LB-01-003/USN 2001-016	2	2.7184	3284.0090	2.0000E-03	<1.6700E-06	<1.6700E-05	22-H	2.7184	100 100	Oxide/NP	NP	RADIONUCLIDES pCi/gm MBq mCi K-40 1.57800E+01 1.7316E+00 4.6800E-02 Pu-239 [4.7800E-07 g] 1.00000E-02 1.0989E-03 2.9700E-05 Ra-226 3.88000E+01 4.2550E+00 1.1500E-01 Sr-90 6.49000E+00 7.5850E-01 2.0500E-02 Th-232 [1.8600E-02 kgs] 6.90000E-01 7.5850E-02 2.0500E-03	AU
		96.0000	3.6200	2.0000E-01	<1.000E+02	<1.000E+03		96.0000					
												U-nat [2.5700E-07 kgs] 1.21810E+02 1.3357E+01 3.6100E-01	
												Subtotal 2.0179E+01 5.4538E-01	
												Total 2.0179E+01 5.4538E-01	
												SNM: [4.7800E-07 g] Source: [1.8600E-02 kgs]	
LB-01-004/USN 2001-016	2	2.7184	3302.1527	2.0000E-03	<1.6700E-06	<1.6700E-05	22-H	2.7184	100 100	Oxide/NP	NP	K-40 1.57800E+01 1.7427E+00 4.7100E-02 Pu-239 [4.7800E-07 g] 1.00000E-02 1.1026E-03 2.9800E-05 Ra-226 3.88000E+01 4.2920E+00 1.1600E-01 Sr-90 6.49000E+00 7.6220E-01 2.0600E-02 Th-232 [1.8700E-02 kgs] 6.90000E-01 7.6220E-02 2.0600E-03	AU
		96.0000	3.6400	2.0000E-01	<1.000E+02	<1.000E+03		96.0000					
												U-nat [2.5800E-07 kgs] 1.21810E+02 1.3468E+01 3.6400E-01	
												Subtotal 2.0342E+01 5.4979E-01	
												Total 2.0342E+01 5.4979E-01	
												SNM: [4.7800E-07 g] Source: [1.8700E-02 kgs]	
LB-01-005/USN 2001-016	2	2.7184	3565.2363	2.0000E-03	<1.6700E-06	<1.6700E-05	22-H	2.7184	100 100	Oxide/NP	NP	K-40 1.57800E+01 1.8944E+00 5.1200E-02 Pu-239 [5.2400E-07 g] 1.00000E-02 1.2025E-03 3.2500E-05 Ra-226 3.88000E+01 4.6520E+00 1.2600E-01 Sr-90 6.49000E+00 8.2880E-01 2.2400E-02 Th-232 [2.0400E-02 kgs] 6.90000E-01 8.2880E-02 2.2400E-03	AU
		96.0000	3.9300	2.0000E-01	<1.000E+02	<1.000E+03		96.0000					
												U-nat [2.8100E-07 kgs] 1.21810E+02 1.4652E+01 3.9600E-01	
												Subtotal 2.2121E+01 5.9787E-01	
												Total 2.2121E+01 5.9787E-01	
												SNM: [5.2400E-07 g] Source: [2.0400E-02 kgs]	

FORM 541A (10-96)

DOT SHIPPING 5 of 6

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

Envirocare of Utah, Inc.

2. MANIFEST NUMBER 3102-01-0001

3. PAGE 3 OF 3 PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER / GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (ton)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	pCi/gm	MBq / mCi	
LB-01-006/USN 2001-016	2	2.7184	2041.1658	2.0000E-03	<1.6700E-06	<1.6700E-05	59-DEBRIS, SOIL, PPE, METAL-H	2.7184	100	Oxide/NP	NP	K-40 Pu-239 [2.7800E-07 g] Ra-226 Sr-90 Th-232 [1.0800E-02 kgs]	1.57800E+01 1.00000E-02 3.88000E+01 6.49000E+00 6.90000E-01	1.0064E+00 6.3640E-04 2.4753E+00 4.4030E-01 4.4030E-02	2.7200E-02 1.7200E-05 6.6900E-02 1.1900E-02 1.1900E-03	AU
		96.0000	2.2500	2.0000E-01	<1.000E+02	<1.000E+03		96.0000	100							
												U-nat [1.4900E-07 kgs]	1.21810E+02	7.7700E+00	2.1000E-01	
												Subtotal		1.1737E+01	3.1721E-01	
												Total		1.1737E+01	3.1721E-01	
Shipment Totals		16.3104	18678.9351									SNM: [2.7800E-07 g] Source: [1.0800E-02 kgs]				
		576.0000	20.5900									SNM: [2.7010E-06 g] Source: [1.0520E-01 kgs]		1.1422E+02	3.0871E+00	

FORM 541A (10-96)

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
ISOTOPES REPORT

For Manifest # 3102-01-0001
Envirocare of Utah, Inc.

Isotope	Total Activity (MBq)	(mCi)
K-40	9.7939E+00	2.6470E-01
Pu-239	6.2049E-03	1.6770E-04
Ra-226	2.4083E+01	6.5090E-01
Sr-90	4.2846E+00	1.1580E-01
Th-232	4.2846E-01	1.1580E-02
U-nat	7.5628E+01	2.0440E+00

DOT SHIPPING PAPER 6 of 6

EMERGENCY RESPONSE INFORMATION

EMERGENCY RESPONSE GUIDE 162

New World Technology
448 Commerce Way
Livermore, CA 94550
Shipping Date: 1-11-02

**24 Hour Emergency Contact
Thom Dias (925) 443-7967

Manifest No.: 312-0-0001

Proper Shipping Name	Hazard Class	ID Number
☒ Radioactive Material, LSA, n.o.s.,	7	UN2912
☐ Radioactive Material, SCO,	7	UN2913

POTENTIAL HAZARDS

HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents. Packaging durability is related to potential hazards of material.
- Undamaged packages are safe; contents of damaged packages may cause external and/or internal radiation exposure.
- Low radiation hazard when material is inside container. If material is released from package or bulk container, hazard will vary from low to moderate. Level of hazard will depend on the type and amount of radioactivity, the kind of material it is in, and/or the surfaces it is on.
- Some material may be released from packages during accidents of moderate severity. This poses little risk to people.
- Released radioactive materials or contaminated objects usually will be visible if packaging fails.
- Some exclusive use shipments of bulk and packaged materials will not have "RADIOACTIVE" labels.
- Placards, markings, and shipping papers provide identification.
- Some packages may have a "RADIOACTIVE" label and a second hazard label. The second hazard is usually greater than the radiation hazard: so follow this guide as well as the response guide for the second hazard class label.
- Some radioactive materials cannot be detected by commonly available instruments. •Runoff from control of cargo fire may cause low-level pollution.

FIRE OR EXPLOSION

- Some of these materials may burn, but none of them ignites readily. •Nitrates are oxidizers and may ignite other combustibles (see guide 141).
- Uranium and Thorium metal cutting or granules may ignite spontaneously if exposed to air (see Guide 136).

PUBLIC SAFETY

- **Call Thom Dias at (925) 443-7967**
- Priorities for rescue, life saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation levels.
- Radiation authority must be notified of accident conditions, and is usually responsible for radiological decisions.
- Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions.
- Stay upwind. •Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

EMERGENCY RESPONSE

FIRE

- Presence of radioactive material will not change effectiveness of fire control techniques. • Move containers from fire area you can do it without risk.
- Do not move damaged packages; move undamaged containers out of fire zone.

Small Fires

- Dry chemicals, CO_2, Water spray or regular foam.

Large Fires

- Water spray, fog (flooding amounts). •Dike fire-control water for later disposal.

SPILL OR LEAK

- Do not touch damaged packages or spilled material.

Liquid Spills

- Cover with sand, earth or other non-combustible absorbent material. • Cover powder spill with plastic sheet or tarp to minimize spreading.
- Dike to collect large liquid spills.

FIRST AID

- Medical problems take priority over radiological concerns. •Use first aid treatment according to the degree of the injury.
- Do not delay care and transport of a seriously injured person. •Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons who contacted released material may be a minor contamination problem to contacted persons, equipment and facilities.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves

The above information is intended to satisfy the requirements of 49 CFR parts 172.600, 172.602 & 172.604.

NWT
EMERGENCY PROCEDURES

New World Technology
448 Commerce Way
Livermore CA 94550

**** 24 Hour Emergency Contact**
Thomas J. Dias (925) 443-7967

EMERGENCY PROCEDURE TO BE FOLLOWED BY VEHICLE DRIVER IN THE EVENT OF AN ACCIDENT:

1. Perform lifesaving rescue and emergency first aid. Delay other first aid care until victims can be removed from the vicinity of any potentially hazardous material. Notify receiving medical facilities of possible contamination or radiation exposure of the injured.
2. Establish a control zone. The perimeter of this zone will be determined by the accident scene conditions. If there is no release of radioactive material, a distance of 20 feet is required. If the containers are breached and dispersal is a potential, increase the control zone as large as possible.
    A. Limit time near radioactive shipping packages as much as possible.
    B. Cover spilled radioactive material with plastic sheeting or tarps to prevent or limit dispersal.
    C. Avoid direct contact with radioactive material. Utilize protective clothing and utilize anything available for remote handling.
3. Detain personnel in the immediate area and items with possible contamination until they can be monitored for radioactive contamination.
4. **If there is a fire**, advise individuals and emergency responders that everyone should move upwind, Use respirators if you need to enter the area. Inform the fire department that the truck is carrying radioactive materials.
5. The following persons are to be notified in the sequence shown below:
    A. Thomas J. Dias, Director of Brokerage Operations, Livermore, CA
    Day: (925) 443-7967
    Night: (510) 581-3244
    Pager: (925) 277-6452
    B. Additional 24-Hour Emergency Contact: Don Wadsworth, Livermore, CA
    Day: (925) 443-7967
    Night: (925) 443-7982
    Pager: (888) 771-9710
    C. Notify the state and local emergency responders by dialing 911 in the event the emergency contacts above cannot be reached or if there is a serious threat to life or property.
    D. For general information on the chemicals identified in the accident call CHEMTREC at (800) 424-9300.

NWT
CONTAINER INSPECTION CHECKLIST

ITEM INSPECTED	INITIAL or N/A
3102-01-0001 45-1, 2, 3, 4, 5, 6	
1.Containers are in unimpaired physical condition	NS
2.Closure devices are secure.	M
A. Bolts and nuts are tight, nut has been fixed with sealant	NA
B. Bungs and drain plugs are tight and have been fixed with sealant	NA
C. Boxes have been inspected for lid to body seal, sealant has been applied, if required.	M
3. Labels have been applied and are:	M
A. Consistent with the proper shipping name of contents	M
B. Consistent with the shipping paperwork	M
C. Legible	M
a. White I, Yellow II, Yellow III	NA
b. Radioactive LSA	NS
c. Proper shipping name	M
d. Container No. & Container weight	M
e. Container specifications (i.e. DOT 7-A type A, UN 1A-2 etc.)	NA
f. Contents label	NS
g. Class A, B, or C , Stable or Unstable markings	M
h. Consignee or consignor name and address	M
i. Security seal	NA
j. RQ marking	NA
k. Hazardous constituent labels (flammable, corrosive, etc.)	NA
l. Hazardous waste label	M
m. Bulk packaging labels	NA
4. Unnecessary labels and markings have been removed or painted over	M
5. Package has been inspected for liquids and non-conforming material or Certificate of Contents form (figure 4.4.6.6) has been completed.	M
6. Solidified and absorbed liquid packages have been inspected per Section 4.0 of the NWT brokerage field operating procedures.	NA
7. Voids in the containers are minimized, blocking and bracing is adequate to prevent shifting during transit.	NS
8. For NRC approved packages, (C of C) has been complied with.	NA
9. Containers are free of surface contamination.	M
10. Radiation levels have been verified and documented.	M
11. Other	NA

NWT
RADIOLOGICAL SURVEY REPORT

SHIPMENT SURVEY FORM

Date: 1-11-02	Time: 1300	Surveyor (printed name): WILLIE BLEMER	
Surveyor (signature): [signature]		Reviewed by: NA	Date: NA
Purpose of Survey: OUTGOING SHIPMENT			
Location: LONG BEACH NAVAL PIER CA			

INSTRUMENTS USED

MODEL NO.	SERIAL NO.	CAL. DUE DATE	BKGRD
1. LUDLUM 19	138444	7-12-02	0.01 mR/hr
2. LUDLUM 3	B2992	7-19-02	40 CPM
3. LUDLUM 44-9	PR055678	7-19-02	

ITEM OR LOCATION * Smear locations are circled	Dose Rate mR/hr	Contamination counts/minute per 100 cm2		Distance or smear location
		Alpha	B-G	
1. Max D/R on the sides of the vehicle	<0.5			1"
2. Max D/R 2- M from the sides of the vehicle	<0.5			2-Meter
3. Max D/R in the occupied portion of the cab	<0.5	N		Field
4. Max D/R on the underside of the vehicle	<0.5		N	1"
5. Max D/R on the top of the vehicle	<0.5			1"
6. Max D/R on the containers' surface	<0.5			1"
7 Smears of the vehicle prior to loading	N	NOA	NOA	smear
8 Smears of containers prior to loading	N	NOA	NOA	smear
9.				
10.				
11.				

2 Meters <0.5 <0.5 <0.5 Surface 2 M
Surface <0.5 <0.5 <0.5 <0.5 <0.5
<0.5 <0.5

Cab <0.5

Top <0.5 Bottom <0.5

Surface <0.5 <0.5 <0.5
2 Meters <0.5 <0.5 <0.5

Remarks: NOA - NO DETECTABLE ACTIVITY

NWT
TRUCK INSPECTION CHECKLIST

CARRIER: R-R TRUCKING		
TRACTOR NO.: 5298 TYPE: FLAT BED		
TRAILER NO.: 853004RR		
SHIPEMENT NO.: 3102-01-0001		
ITEM	SAT	UNSAT
INCOMING SURVEYS COMPLETE, WITHIN LIMITS AND DOCUMENTED	✓	
VEHICLE IS FREE OF DIRT AND DEBRIS	✓	
INTERIOR SURFACES ARE FREE OF PROTRUSIONS	✓	
TIRES - MINIMUM 3/32" OF TREAD	✓	
WHEELS AND RIMS - LESS THAN 20% BROKEN OR MISSING BOLTS	✓	
ALL LIGHTS ARE OPERATIONAL	✓	
ENSURE BRAKES (NORMAL AND EMERGENCY) AND LOW AIR WARNING ALARMS OPERATIONAL	✓	
FRAME IS FREE OF CRACKS OR BREAKS	✓	
HORN IS OPERATIONAL	✓	
WINDSHIELD WIPERS ARE OPERATIONAL	✓	
DRIVER HAS COMPLETED HIS DAILY SAFETY INSPECTION	✓	
VEHICLE IS LICENSED AND PERMITTED FOR THE STATES IT MUST TRAVEL THROUGH	✓	
REMARKS:		

SIGNATURES:

INSPECTOR: [signature] DATE 1-11-02

DRIVER: [signature] DATE 01-11-02

NOTE: Visible damage occurring in route and not noted on this inspection form must be reported to the receiving facility via phone prior to entry.

NWT
SHIPMENT ACKNOWLEDGMENT

Consignee: Please sign below after receiving and accepting this shipment. If a NRC form 540 or a Hazardous Waste manifest are included with this shipment, please sign block 9, "Authorized consignee acknowledging waste receipt", or consignee block.

Please fax to: **New World Technology**

FAX No. 925-443-0119

Shipment No. :	3102-01-0001

Manifest No. :	98357087 /00001
Consignor:	NWT FOR CARETAKER SITE OFFICE
Consignee:	ENVIROCARE
Date of Shipment:	1-11-02

Signature of Consignee:	
Date of Receipt:	

This above information is intended to satisfy the requirements of 10 CFR 20, appendix F.

NWT
INSTRUCTIONS FOR EXCLUSIVE USE OF VEHICLES

INSTRUCTIONS FOR EXCLUSIVE USE OF VEHICLES

Shipment No. 3201-01-0001 Date 1-11-02

CFR 49, sections 173.403 and 173.441(b) and (c), require that specific instructions for maintenance of exclusive-use shipments controls be provided by the shipper to the carrier. These instructions must be included with the shipment documents.

The following instructions shall be complied with for all exclusive-use shipments.

- The shipper must be notified prior to changing of the tractor or making fifth wheel adjustments.
- Do not move or transfer packages on the transport vehicle from the original configuration.
- The shipment must be loaded by the consignor and unloaded by the consignee from the transport vehicle on which it was originally loaded.
- The shipment must be blocked and braced so as to prevent leakage or shifting of load under incidents normal to transportation.
- If placards are required, the vehicle must be placarded on four (4) sides of the transport vehicle in a clearly visible position with the appropriate placards.
- Notify shipper immediately if the vehicle is involved in an accident or is required to apply emergency breaking which could shift the load and change radiation levels.

In case of accident, vehicle malfunction or deviation from the above instructions, immediately contact one of the following NWT employees:

Thomas J. Dias	Office	(925) 443-7967
	Home	(510) 581-3244
	Pager	(925) 277-6452
Don Wadsworth	Office	(925) 443-7967
	Home	(925) 443-7982
	Pager	(888) 771-9710

Deviations from these instructions are violations of federal laws and could result in carrier penalties.

I have read and understand the above statements concerning the maintenance of exclusive use vehicles.

Jim D. Washington
Signature of Driver

01-11-02
Date

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

GENERATOR: SW DIV NAVAL FACILITIES CARETAKER SITE OFFICE LONG BEACH

MANIFEST DOCUMENT NO.: 00001

STATE MANIFEST DOCUMENT NO.: 98357087

1. This waste is a [X] non-wastewater [ ] wastewater (40 CFR 268.2)
2. This waste is subject to any California List restrictions which are checked below:
[ ] HOC's [ ] PCB's [ ] Acid [ ] Metals [ ] Cyanides
3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subdivision, or check NONE if the waste code has no subdivision. Also check which treatment standards apply.

ITEM	US EPA HAZARDOUS WASTE CODE(S)	SUBDIVISION ENTER THE SUBDIVISION DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE / DESCRIPTION NONE	CONCENTRATION IN MG/KG UNLESS NOTED AS MG/L TCLP OR TREATMENT TECHNOLOGY	MGMT MTHD
1	D008	X	0.75 mg/l	A
2				
3				

MANAGEMENT METHODS (MGMT MTHD)

(A) **RESTRICTED WASTE REQUIRES TREATMENT**
THIS WASTE MUST BE TREATED TO THE APPLICABLE TREATMENT STANDARDS SET FORTH IN 40 CFR PART 268 SUBPART D, 268.32, OR RCRA SECTION 3004(D).

B **NON RCRA (APPENDIX IV OR VI) LAB PACKS**
"I CERTIFY UNDER PENALTY OF LAW THAT I PERSONALLY HAVE EXAMINED AND AM FAMILIAR WITH THE WASTE AND THAT THE LAB PACK DOES NOT CONTAIN ANY WASTES IDENTIFIED AT 268.42 (c)(2). I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING A FALSE CERTIFICATION, INCLUDING THE POSSIBILITY OF A FINE AND IMPRISONMENT." (268.7(a)(8))

C **RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)**
"I CERTIFY UNDER PENALTY OF LAW THAT THE WASTE HAS BEEN TREATED IN ACCORDANCE WITH THE REQUIREMENTS OF 40 CFR 268.42. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING A FALSE CERTIFICATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT." (268.7(b)(5)(ii))

D **RESTRICTED WASTE SUBJECT TO A VARIANCE**
THIS WASTE IS SUBJECT TO A NATIONAL CAPACITY VARIANCE, A TREATABILITY VARIANCE, OR A CASE-BY-CASE EXTENSION.

E **WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
THIS WASTE IS A NEWLY IDENTIFIED WASTE THAT IS NOT CURRENTLY SUBJECT TO ANY 40 CFR PART 268 RESTRICTIONS.

I CERTIFY UNDER PENALTY OF LAW THAT I PERSONALLY HAVE EXAMINED AND AM FAMILIAR WITH THE WASTE THROUGH THE ANALYSIS AND TESTING OR THROUGH KNOWLEDGE OF THE WASTE TO SUPPORT THIS CERTIFICATION AS REQUIRED BY THE TREATMENT STANDARDS SPECIFIED IN 40 CFR 268 SUBPART D AND ALL APPLICABLE PROHIBITIONS SET FORTH IN 40 CFR 268.32 OR RCRA 3004 (d). I BELIEVE THAT THE INFORMATION I SUBMITTED IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING A FALSE CERTIFICATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT. (268.7(a)(2)(ii))

SIGNATURE Mike Re. TITLE BROKER DATE 1-10-02

SNM Exemption Certification

7/12/99 (EC-0230-SNM) Revision 1

The SNM Exemption Certification form must be completed and signed by each generator certifying to the following conditions. Please attach this form and all required information to the Radioactive Waste Profile Record (EC-0230). **A completed and signed copy of this form must also accompany each waste manifest.**

Generator No. / Waste Stream No. 3102-01 Manifest No. 3102-01-0001

1. **Please check one of the following that applies to the waste stream:**

√	Uranium Enrichment Percent	Percent MgO by Weight	Percent Beryllium by Weight	U-235 Concentration (pCi/g)	Measurement Uncertainty* (pCi/g)
☐	< 10 %	≤ 20 %	≤ 1 %	≤ 1900	≤ 285
☐	≥ 10 %	≤ 20 %	≤ 1 %	≤ 1190	≤ 179
☐	Unlimited	Unlimited	Unlimited	≤ 160	≤ 24
☐	Unlimited	Sum of both ≤ 49 % of waste by weight		≤ 680	≤ 102
☒	Not Applicable - Enriched U-235 is not present in the waste.				

* A concentration value is used for the maximum measurement uncertainty limit rather than a percentage value to allow greater flexibility for generators with waste having very low SNM concentrations.

2. **Please certify to the following requirements by checking each box:**

☒ a. Concentrations of SNM in individual waste containers do not exceed the applicable values listed in the above table and SNM isotope concentrations listed in Table 1.

☒ b. The SNM is homogeneously distributed throughout the waste or the SNM concentrations in any contiguous mass of 145 kilograms (320 lbs) do not exceed on average the specified limits. (Based on process knowledge or testing).

☒ c. Except as allowed by Condition 1, the waste does not contain "pure forms" of chemicals containing carbon, fluorine, magnesium, or bismuth in bulk quantities (e.g., a pallet of drums, a B-25 box). By "pure forms," it is meant that mixtures of the above elements such as magnesium oxide, magnesium carbonate, magnesium fluoride, bismuth oxide, etc. do not contain other elements. (Based on process knowledge or testing).

☒ d. Except as allowed by Condition 1, the waste does not contain total quantities of beryllium, hydrogenous material enriched in deuterium, or graphite above one percent of the total weight of the waste. (Based on process knowledge, physical observations, or testing).

☒ e. Waste packages do not contain highly soluble forms of uranium greater than 350 grams of uranium-235 or 200 grams of uranium-233. If the waste contains mixtures of U-233 and U-235, the waste meets the sum of the fractions rule. Highly soluble forms of uranium include, but are not limited to: uranium sulfate, uranyl acetate, uranyl chloride, uranyl formate, uranyl fluoride, uranyl nitrate, uranyl potassium carbonate, and uranyl sulfate. (Based on process knowledge or testing).

Table 1. Maximum concentrations of SNM in individual waste containers (refer to above table for U-235 limits).

Radionuclide	Maximum Concentration (pCi/g)	Measurement Uncertainty (pCi/g)	Radionuclide	Maximum Concentration (pCi/g)	Measurement Uncertainty (pCi/g)
U-233	75,000	11,250	Pu-241	350,000	50,000
Pu-236	500	75	Pu-242	10,000	1,500
Pu-238	10,000	1,500	Pu-243	500	75
Pu-239	10,000	1,500	Pu-244	500	75
Pu-240	10,000	1,500			

3. **Please indicate that the following information is attached to the Radioactive Waste Profile Record by checking each box. (Note: Only the two-page SNM Exemption Certification form needs to be included with each manifest).**

   ☒ a. Provide a description of how the waste was generated, list the physical forms in the waste, and identify the uranium chemical composition.

   ☒ b. Provide a general description of how the waste was characterized (including the volumetric extent of the waste, and the number, location, type, and results of any analytical testing), the range of SNM concentrations, and the analytical results with error values used to develop the concentration ranges.

   ☒ c. Describe the process by which the waste was generated showing that the spatial distribution of SNM must be uniform, or other information supporting spatial distribution.

   ☒ d. Describe the methods to be used to determine the concentrations on the manifests. These methods could include direct measurement and the use of scaling factors. Describe the uncertainty associated with sampling and testing used to obtain the manifest concentrations.

4. **Generator's certification of compliance with the SNM exemption:** I certify that the information provided on this form is complete, true, and correct and is based on process knowledge, physical observations, or approved laboratory testing. I also certify that sampling and radiological testing of waste containing SNM was performed in accordance with Envirocare's Radioactive Material License and that any supporting documentation and analytical results have been submitted to Envirocare of Utah, Inc.

Authorized Signature	Daryl DeLong	Assistant Broker	1/8/2002
	Printed Name	Title	Date

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL
GENERATOR SITE ACCESS PERMIT
ACCESSING A LAND DISPOSAL FACILITY WITHIN UTAH
UNDER THE PERMIT REQUIREMENTS IN R313-26-3

R313-26 of the Utah Radiation Control Rules establishes the terms for a Generator Site Access Permit Program which authorizes generators and brokers to deliver radioactive wastes to a land disposal facility located within the state.

****

Name: New World technology) Permit Number: 0109000101

Address: 448 Commerce Way)

)**********

) Expiration Date: 2002-12-31

Password: 3D4x2kyD)

Your password is required to renew your permit online.)

Store this information in a secure location.)

****

Conditions:

1. The broker/generator shall comply with the provisions of R313-26 and the requirements as set forth in R313-19-100.

2. The permit number shall accompany all generator and broker shipments to the land disposal facilities within the state of Utah.

3. Generator Site Access permittees shall be subject to the provisions of Rule R313-14 for violations of federal regulations, state rules or requirements in the current land disposal facility operating license regarding radioactive waste packaging, transportation, labeling, notification, classification, marking, manifesting or description.

UTAH RADIATION CONTROL BOARD

2001-09-28	1/1/02	William J. Sinclair
Registration Date	Activation Date	William J. Sinclair, Executive Secretary

Payment Summary:

Name:
Receipt Number: Amount Paid:
Routing Number: Account Number:

For security reasons, your permit will not be active until after a 72-hour waiting period.

Willie Bremer

From: Daryl Delong
Sent: Thursday, January 10, 2002 2:30 PM
To: Willie Bremer
Subject: FW: 3102-01 (1/9/02, 12:52 a.m.)

-----Original Message-----
From: Gayle Gulbrandsen [mailto:ggulbrandsen@envirocareutah.com]
Sent: Wednesday, January 09, 2002 11:53 AM
To: DarylD@newworld.org
Subject: RE: 3102-01 (1/9/02, 12:52 a.m.)

Daryl,

I am confirming the following shipment(s) for arrival at EOU on 1/14/02:
3102-01-0001
If you have any questions, please call.

Thank You,

Gayle Gulbrandsen
Technical Assistant
Envirocare of Utah, Inc.
435-884-0155, Ext. 1170

*** Please send all scheduling e-mail to: scheduling@envirocareutah.com ***

-----Original Message-----
From: DarylD@newworld.org [mailto:DarylD@newworld.org]
Sent: Tuesday, January 08, 2002 4:04 PM
To: scheduling@envirocareutah.com
Cc: Willie@newworld.org
Subject: 3102-01

Gayle,

Attached is the updated revision 3 of the 5-day notice.

Thanks

Daryl

<<5-Day Notice Long Beach 3102-01-0001, 1-8-02 Rev 3.doc>>

ENVIROCARE OF UTAH, INC.
THE SAFE ALTERNATIVE

SHIPPING CHECKLIST

The following checklist has been developed to assist generators in shipping radioactive waste to Envirocare of Utah (Envirocare). This information is also contained in the "Waste Acceptance Guidelines" document available on Envirocare's website at www.envirocareutah.com.

Scheduling: Must be established at least 5 working days in advance of requested arrival date

- [x] A "Notice to Transport" has been issued by Envirocare for the Waste Profile.
- [x] **Submitted "5 Working Day Advanced Shipment Notification" form to request shipping schedule. Email form to scheduling@envirocareutah.com or fax to (435) 884-3549.**
- [x] Shipping schedule has been confirmed by Envirocare.
  Envirocare's Shipping & Receiving Scheduler: (435) 884-0155.

Advanced Manifesting: Must be submitted prior to releasing each shipment/conveyance

- [x] Manifested information is consistent with the approved Waste Profile.
  Verify that all manifested radionuclides are listed in item C.1 of the approved Waste Profile and that manifested concentrations do not exceed the approved ranges.
- [x] Verified consignee information on manifests (see below).
  Consignee: Envirocare of Utah, Inc.
  Clive Disposal Site
  Interstate 80, Exit 49
  Clive, UT 84029
  Contact: Shipping and Receiving
  Phone No.: (435) 884-0155
- [x] Verified Shipment ID Number (XXXX-YY-ZZZZ)
  XXXX is the generator number, YY is the waste stream number, and ZZZZ is the shipment number (starting with 0001 for the first shipment/conveyance and incrementing by one for each additional shipment/conveyance). If a Hazardous Waste Manifest is submitted, include the Shipment ID Number in Block 15.
- [x] Verified valid Utah Site Access Permit number in Block 5 on Form 540. Generators must apply for the permit with the Utah Division of Radiation Control (DRC). The Shipper Name and Facility must be consistent with the Utah Site Access Permit number.
- [x] Submitted manifests to Envirocare **at least three working days** prior to the shipment arrival date.
  If using Low-Track to generate the Uniform LLRW Manifest (NRC Forms 540/541), please export the manifests and send via email to manifest@envirocareutah.com. Otherwise, fax manifests to "Shipping and Receiving – Manifest" at (435) 884-1721. Low-Track is available at http://www.mltech.com.
- [ ] Submitted the Uniform LLRW Manifest to the DRC. The manifest must be received at the DRC **prior to the shipment arrival date** and may be emailed, faxed, or mailed to the following addresses:
  Email: drcadmin@deq.state.ut.us, DRC Fax: 801-533-4097
  Mailing Address: Division of Radiation Control
  168 N. 1950 W.
  SLC, UT 84116
  Phone: 801-536-0073

801-533-4097

Shipment Paperwork and Inspection

- [x] The original shipping paperwork/manifests plus three copies accompany each shipment (conveyance). Include LDR Notification/Certification forms if applicable. **Only one copy of the 540/541 is required with the shipment if the electronically signed copy is submitted via email 3 working days prior to the shipment arrival date.**
- [x] If applicable, **a completed and signed copy of the SNM Exemption Certification form** has been included with the shipping papers.
- [x] Containers have been inspected and comply with DOT's strong, tight packaging requirements.
- [x] **Containers do not contain free standing liquids.**

mb Bm. 1-11-02

NWT
QUALITY ASSURANCE SHIPMENT CHECKLIST
ENVIROCARE, NSSI, DSSI, PERMA-FIX

SHIPMENT INFORMATION

Date: 1-11-02	Tractor No.: 5798
Shipment No.: 3102-01-0001	Trailer No.: 3530048RR
Manifest No.: 98357087 / 0001	Carrier: R-R TRUCKING
Drivers name (print): JIMMY WASHINGTON	

PAPERWORK

Item	Initial or N/A
1. Radioactive Shipment Manifest Form, completed, **signed** and dated.	M
A. All copies are legible and complete (All blanks are filled in).	M
B. Assure dose rates match labels and Transport Index.	M
C. Activity limits have been checked for RQ, Limited Quantity, LSA, etc..	M
D. Waste class per CFR part 61 is correct.	M
E. First page totals have been checked and conform to continuation sheets.	M
2. Bill of Lading is completed, **signed** and dated.	M NA
A. Proper shipping name, hazard class and identification no.	M
B. Millicuries, SNM grams, source lb. and isotopes	M
C. Physical and chemical form.	M
D. RQ, if applicable	M
D. Fissile exempt, if applicable	M
E. Door seal Numbers. _____ _____ _____	NA
F. Labels used and Transport Index.	M NA
G. Shipment volume and weight.	M
3. Notice to Ship (Envirocare)	M
4. Vehicle survey Figure (4.3.1)	M
5. Emergency Response Information (Figure 4.6-A)	M
6. Driver's Emergency Procedures	M
7. Exclusive use Instructions, if required (Figure 4.6-C)	M
8. 741 form, if required	NA
9. Truck inspection checklist (Figure 4.3)	M
10. Excepted package certifications, if required (Figure 4.6-D)	NA
11. Uniform Hazardous Waste Manifests, if required, signed by driver.	NA
12. Land Disposal Restriction Statement if required.	M
13. Shipment Acknowledgment form 4.6-J	M
	M

OTHER

1. Door seals and padlocks installed.	NA
2. DOT Shipping Paperwork is identified and sequentially numbered.	M
3. Placards on the vehicle and extra placards given to driver.	M
4. Directions or map given to driver.	M

NOTICE TO TRANSPORT

11/4/98 (EC-1800) Rev 0

Envirocare has reviewed completed form EC-0230 (or EC-0200, EC-0175, EC-0650, EC-3200 and EC-0500 as appropriate). Based on our review of the information and certifications provided in those forms, Envirocare hereby issues notice that the following waste may be scheduled for transport and delivery to the Envirocare South Clive facility.

S.W. Div Naval Facilities/Long Beach, CA — GENERATOR NAME / WASTE LOCATION
01-10-02 — DATE

New World Technology — CONTRACTOR NAME
Soil/Debris — MATERIAL TYPE

3102-01 Notice To Transport Rev. #0 Waste Profile Record Rev. # 0 (01/08/02)
GENERATOR RECORD # (GENERATOR NUMBER-WASTE STREAM NUMBER)

Soil, Metal, Debris — WASTE STREAM NAME
576 Ft^3 — VOLUME OF MATERIAL
01-02 to 01-03 — DELIVERY DATES
*This "Notice to Transport is valid during the time period specified.

WASTE TYPE: LICENSED X ; NON-LICENSED ____ ; NORM ____ ; LLRW ____ ;

FUSRAP ____ ; 11e.(2) ____ ; MW ____ ; TREATED MW ____ ; MW NEEDING TRMT X ;

REQUIRED DISPOSAL LOCATION: NORM ____ ; LLRW ____ ; MW **X** ; 11e.(2) ____ ;
**Requires disposal in MW cell

Signature — Date 1/10/02

NOTICE: Transport and delivery of the material are to be done in accordance with a signed Disposal Agreement. Approved Radioactive Waste Shipment and Disposal Record forms (RSR's) must accompany the shipment(s). Upon arrival at the facility, the shipment will be made subject to incoming-shipment procedures and may be accepted or rejected by Envirocare for management at the facility. To generators of mixed waste designated above, notice is hereby provided that Envirocare possesses a RCRA permit for the treatment, storage and disposal of mixed (radioactive/hazardous) waste. Hazardous waste manifests and applicable LDR notices and certifications must also accompany mixed waste shipments. Envirocare will accept conforming waste shipped by the generator in accordance with our permits and waste disposal agreement.
**YOUR WASTE MUST NOT CONTAIN FREE LIQUIDS OR PYROPHORIC, SHOCK- SENSITIVE, AIR-REACTIVE, OR WATER-REACTIVE MATERIALS, AND MUST CONFORM WITH THE FOLLOWING INCOMING SHIPMENT PARAMETER TOLERANCES:

6.93 – 8.2	OX/Neither	ND	<10	ND
Solid pH	Ox/Red Test	Cyanide Test	"Sniffer"	Sulfide test

The above ranges have been established for your waste using the pre-shipment samples you sent.

DO NOT SHIP MATERIAL WHICH EXCEEDS ANY OF THE ABOVE TOLERANCES.
Should a sample of an incoming shipment be analyzed to be outside of these tolerances, your shipment will be rejected and only accepted following additional testing of the material and statements from the generator.

January 10, 2002

Page Break

FORM 540 ENIC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
925-443-7967

ORGANIZATION
New World Technology

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
[X] YES
[ ] NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 1

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? [ ] YES [X] NO
If "Yes," provide Manifest Number ====>

EPA MANIFEST NUMBER
NA

5. SHIPPER -- NAME AND FACILITY
MWT for Caretaker Site Office Long Beach
PO Box 444
East Irvine, CA 92650-0444

none
8422

SHIPMENT NUMBER
USN 2001-016-EMC

CONTACT
Willie Beamer

6. CARRIER -- Name and Address
R & R Trucking
P.O. Box 545
Duenweg, MO 64841

CONTACT
Don Ritchie

SIGNATURE -- Authorized carrier acknowledging waste receipt

SHIPMENT I.D. NUMBER
USN 2001-016-EMC

[ ] COLLECTOR
[ ] PROCESSOR
[X] GENERATOR TYPE (Specify) G

TELEPHONE NUMBER (Include Area Code)
925-443-7967

EPA I.D. NUMBER
MOR-01-850-1973

SHIPPING DATE
NA

TELEPHONE NUMBER (Include Area Code)
800-825-6885

DATE
1-24-02

7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A 1 PAGE(S)
FORM 542 AND 542A None PAGE(S)
ADDITIONAL INFORMATION None PAGE(S)

9. CONSIGNEE - Name and Facility Address
Environmental Management & Controls, INC
3106 S. Faith Home Rd.
Turlock, CA 95380

SIGNATURE - Authorized consignee acknowledging waste receipt

DATE
1-25-02

8. MANIFEST NUMBER (Use this number on all continuation pages)
USN 2001-016-EMC

CONTACT
Gaye Nelson

TELEPHONE NUMBER (Include Area Code)
209-667-1102

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE

TITLE
BROKER

DATE
1-24-02

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY Ci	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive material, n.o.s., 7, UN2982	Yellow II	0.7	Solid chloride/oxide	Ra-226		1.1100E+02	3.0000E+00	NA	100. LBS; 4.01 FTS	LB-008

FOR CONSIGNEE USE ONLY

20. Environmental Management and Controls, INC
3106 South Faith Home Rd.
Turlock, CA 95380

FAXED

FORM 540 (10-96)

FORM 541 EMC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	TOTAL
1	m3 0.1136	kg 45.3592	NP	NP	NP	NP
	R3 4.0100	lb 100.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.1100E+02	NP	NP	NP	NP	(kgs)	NA
mCi	3.0000E+00	NP	NP	NP	NP	(lbs)	NA

2. MANIFEST NUMBER: USN 2001-016-EMC

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME: NWT for Caretaker Site Office L

SHIPMENT ID NUMBER: USN 2001-016-EMC

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER						
							PHYSICAL DESCRIPTION			CHEMICAL DESCRIPTION		RADIOLOGICAL DESCRIPTION			
5. CONTAINER IDENTIFICATION NUMBER / none	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
LB-008/PO Box 444 East Irvine, CA 92650-0444	19 US DOT 7A TYPE A, METAL DRUM	0.1136	45.3592	1.0000E-01	<1.6700E-06	<1.6700E-05	59-RA-226 ITEMS-H 39-H	0.1136	100 100	chloride/oxide/na	0.00	Ra-226	1.1100E+02	3.0000E+00	A
		4.0100	100.0000	1.0000E+01	<1.000E+02	<1.000E+03		4.0100				Subtotal	1.1100E+02	3.0000E+00	
												Total	1.1100E+02	3.0000E+00	
Shipment Totals		0.1136	45.3592										1.1100E+02	3.0000E+00	
		4.0100	100.0000												

NOTE 1: Container Description Codes. For containers/ waste requiring disposal in approved structural overpacks the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6, or additional page

Note 1A: Barnwell Specific Container Description Codes. (Choose one code as may be applicable.)

A High Integrity Container - Poly
B High Integrity Container - Poly with Steel Shell
C High Integrity Drum Overpack - Poly
D High Integrity Container - Stainless Steel
E High Integrity Container - Fiberglass
F Liner - Steel

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in Item 11, or additional page

Note 2A: Barnwell Specific Waste Descriptor Codes (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S" and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED.

Solidification
90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in Item 13, or additional page
100. None Required.

Note 3A: Barnwell Specific Solidification and Stabilization Media Codes (Choose this code if applicable)

M Wax Binder

FORM 541 (10-96)

ORIGINAL - NOT NEGOTIABLE

SHIPMENT NO: MSN 2001-EMC-2
ID No.
DATE: 1-24-02

NAME OF CARRIER: R-R TRUCKING

TO:		FROM:	
CONSIGNEE:	New World Technology @ CARE TAKER LONG BEACH	CONSIGNOR:	EMC
STREET:	SW DIV NAVY POBox 444	STREET:	3106 S. FAITH HOME Rd
CITY:	EAST IRVINE STATE: CA	CITY:	TURLOCK STATE: CA
ZIP CODE:	92650-444 PHONE:	ZIP CODE:	95380 PHONE: 209-667-1102

24 HOUR EMERGENCY RESPONSE TELEPHONE NUMBER: 925-443-7967

Truck No. Trailer No.

NO. OF UNITS & CONTAINER TYPE	HM	BASIC DESCRIPTION (PROPER SHIPPING NAME, HAZARD CLASS, IDENTIFICATION NO (UN OR NA), PACKING GROUP, PER 172.101, 172.202, 172.203)	TOTAL QUANTITY	WEIGHT (Gs)	RATE
1	X	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - LIMITED QUANTITY OF MATERIAL, 7, UN2910 EMPTY DRUM CONTAINING Ra-226 CONTAMINATION	4.01 CUFT	140 LBS	140
		Chemical Form: oxide / chloride Ra			
		Physical Form: solid			
		Radionuclides: Ra-226			
		Source Kg: NA			
		Special Nuclear grams: NA			
		Transportation Index: NA			
		Labels Used: NA			
		Container Type: METAL DRUM STC			
		Total Activity (MBq): 3.7 E-5			
		Total Activity (mCi): 1 E-6			
		DOT SUBTYPE: EA2 DRUM # HB-007			

Received 1-25-02 @ 8:45 AM BY EMC

FAXED

PLACARDS TENDERED: YES NO	Permit C.O.D. to:
Note-Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ <0.40 per lb.	C.O.D. Amt: $ Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by rail/truck/highway according to applicable international and national government regulations. Signature	C.O.D. Fee: Prepaid * Collect * $ Total Charges $ Freight Charges Freight Prepaid Check box if charges accept when box at ... are to be ... collected

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Shipper:	New World Technology	Carrier:	R-R TRUCKING
Signature:		Signature:	
Title:	Broker	Date:	1-24-02

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ATTACHMENT 3

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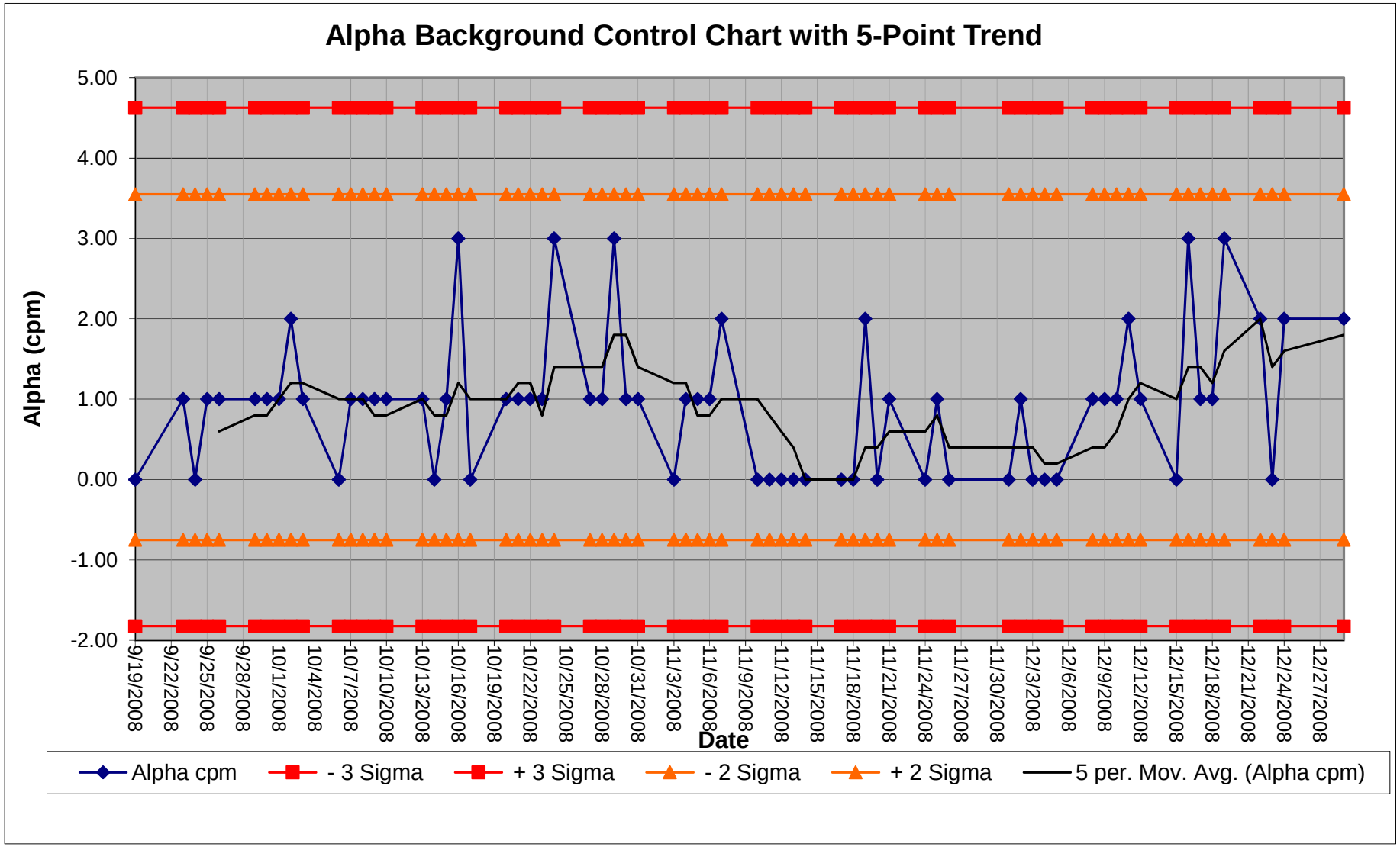
Ludlum Model 2360 S/N 184952



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Ludlum Model 2360, S/N 184952
CONTROL CHARTS

		Alpha Background cpm			
Date	Alpha cpm	- 3 Sigma	+ 3 Sigma	- 2 Sigma	+ 2 Sigma
9/19/2008	0.00	-1.82	4.62	-0.75	3.55
9/23/2008	1.00	-1.82	4.62	-0.75	3.55
9/24/2008	0.00	-1.82	4.62	-0.75	3.55
9/25/2008	1.00	-1.82	4.62	-0.75	3.55
9/26/2008	1.00	-1.82	4.62	-0.75	3.55
9/29/2008	1.00	-1.82	4.62	-0.75	3.55
9/30/2008	1.00	-1.82	4.62	-0.75	3.55
10/1/2008	1.00	-1.82	4.62	-0.75	3.55
10/2/2008	2.00	-1.82	4.62	-0.75	3.55
10/3/2008	1.00	-1.82	4.62	-0.75	3.55
10/6/2008	0.00	-1.82	4.62	-0.75	3.55
10/7/2008	1.00	-1.82	4.62	-0.75	3.55
10/8/2008	1.00	-1.82	4.62	-0.75	3.55
10/9/2008	1.00	-1.82	4.62	-0.75	3.55
10/10/2008	1.00	-1.82	4.62	-0.75	3.55
10/13/2008	1.00	-1.82	4.62	-0.75	3.55
10/14/2008	0.00	-1.82	4.62	-0.75	3.55
10/15/2008	1.00	-1.82	4.62	-0.75	3.55
10/16/2008	3.00	-1.82	4.62	-0.75	3.55
10/17/2008	0.00	-1.82	4.62	-0.75	3.55
10/20/2008	1.00	-1.82	4.62	-0.75	3.55
10/21/2008	1.00	-1.82	4.62	-0.75	3.55
10/22/2008	1.00	-1.82	4.62	-0.75	3.55
10/23/2008	1.00	-1.82	4.62	-0.75	3.55
10/24/2008	3.00	-1.82	4.62	-0.75	3.55
10/27/2008	1.00	-1.82	4.62	-0.75	3.55
10/28/2008	1.00	-1.82	4.62	-0.75	3.55
10/29/2008	3.00	-1.82	4.62	-0.75	3.55
10/30/2008	1.00	-1.82	4.62	-0.75	3.55
10/31/2008	1.00	-1.82	4.62	-0.75	3.55
11/3/2008	0.00	-1.82	4.62	-0.75	3.55
11/4/2008	1.00	-1.82	4.62	-0.75	3.55
11/5/2008	1.00	-1.82	4.62	-0.75	3.55
11/6/2008	1.00	-1.82	4.62	-0.75	3.55
11/7/2008	2.00	-1.82	4.62	-0.75	3.55
11/10/2008	0.00	-1.82	4.62	-0.75	3.55
11/11/2008	0.00	-1.82	4.62	-0.75	3.55
11/12/2008	0.00	-1.82	4.62	-0.75	3.55
11/13/2008	0.00	-1.82	4.62	-0.75	3.55
11/14/2008	0.00	-1.82	4.62	-0.75	3.55
11/17/2008	0.00	-1.82	4.62	-0.75	3.55
11/18/2008	0.00	-1.82	4.62	-0.75	3.55
11/19/2008	2.00	-1.82	4.62	-0.75	3.55
11/20/2008	0.00	-1.82	4.62	-0.75	3.55
11/21/2008	1.00	-1.82	4.62	-0.75	3.55
11/24/2008	0.00	-1.82	4.62	-0.75	3.55
11/25/2008	1.00	-1.82	4.62	-0.75	3.55
11/26/2008	0.00	-1.82	4.62	-0.75	3.55
12/1/2008	0.00	-1.82	4.62	-0.75	3.55
12/2/2008	1.00	-1.82	4.62	-0.75	3.55
12/3/2008	0.00	-1.82	4.62	-0.75	3.55
12/4/2008	0.00	-1.82	4.62	-0.75	3.55
12/5/2008	0.00	-1.82	4.62	-0.75	3.55
12/8/2008	1.00	-1.82	4.62	-0.75	3.55
12/9/2008	1.00	-1.82	4.62	-0.75	3.55
12/10/2008	1.00	-1.82	4.62	-0.75	3.55
12/11/2008	2.00	-1.82	4.62	-0.75	3.55
12/12/2008	1.00	-1.82	4.62	-0.75	3.55
12/15/2008	0.00	-1.82	4.62	-0.75	3.55
12/16/2008	3.00	-1.82	4.62	-0.75	3.55
12/17/2008	1.00	-1.82	4.62	-0.75	3.55
12/18/2008	1.00	-1.82	4.62	-0.75	3.55
12/19/2008	3.00	-1.82	4.62	-0.75	3.55
12/22/2008	2.00	-1.82	4.62	-0.75	3.55
12/23/2008	0.00	-1.82	4.62	-0.75	3.55
12/24/2008	2.00	-1.82	4.62	-0.75	3.55
12/29/2008	2.00	-1.82	4.62	-0.75	3.55

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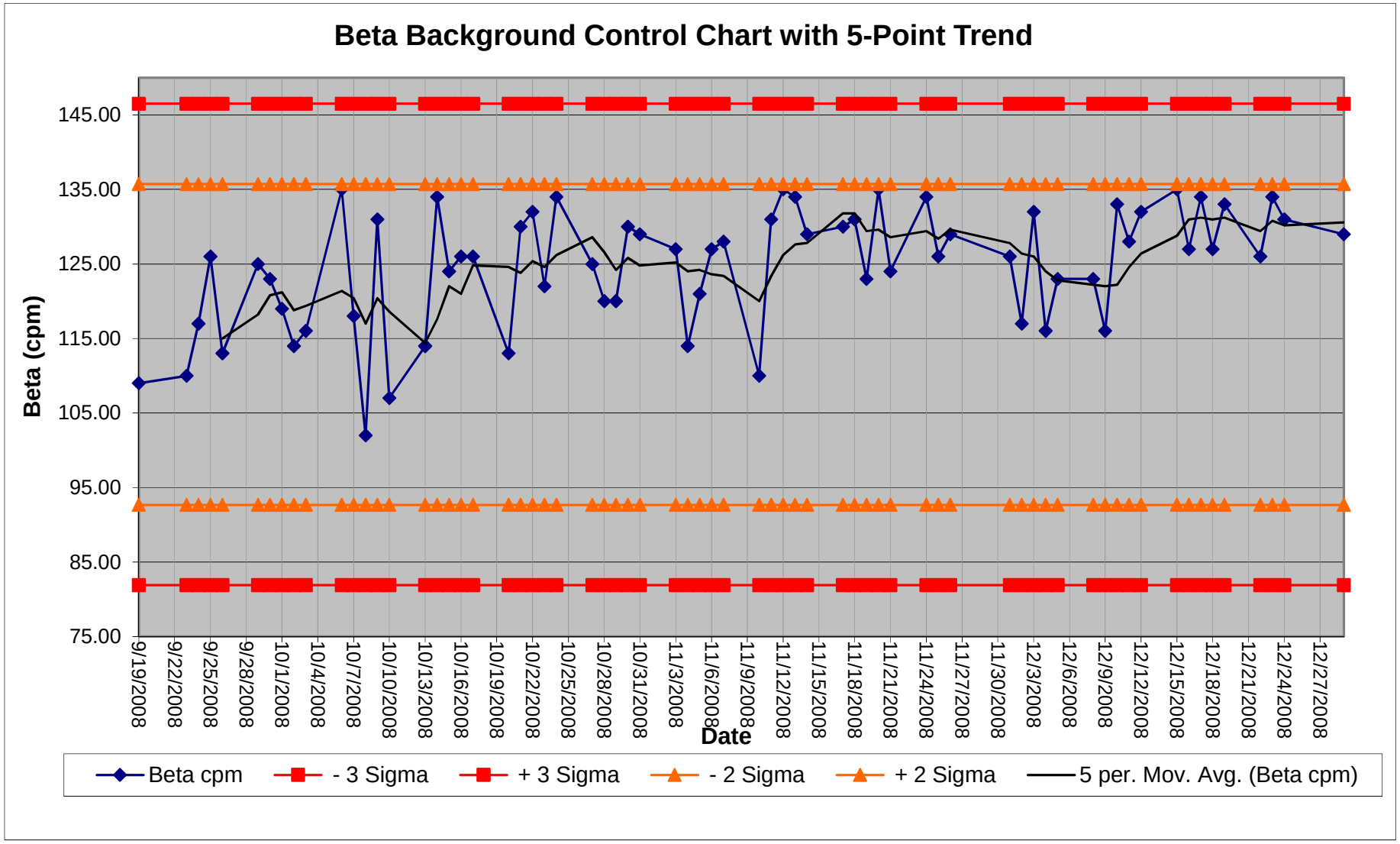
Ludlum Model 2360 S/N 184952



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Ludlum Model 2360, S/N 184952
CONTROL CHARTS

		Beta Background cpm			
Date	Beta cpm	- 3 Sigma	+ 3 Sigma	- 2 Sigma	+ 2 Sigma
9/19/2008	109.00	81.90	146.50	92.66	135.74
9/23/2008	110.00	81.90	146.50	92.66	135.74
9/24/2008	117.00	81.90	146.50	92.66	135.74
9/25/2008	126.00	81.90	146.50	92.66	135.74
9/26/2008	113.00	81.90	146.50	92.66	135.74
9/29/2008	125.00	81.90	146.50	92.66	135.74
9/30/2008	123.00	81.90	146.50	92.66	135.74
10/1/2008	119.00	81.90	146.50	92.66	135.74
10/2/2008	114.00	81.90	146.50	92.66	135.74
10/3/2008	116.00	81.90	146.50	92.66	135.74
10/6/2008	135.00	81.90	146.50	92.66	135.74
10/7/2008	118.00	81.90	146.50	92.66	135.74
10/8/2008	102.00	81.90	146.50	92.66	135.74
10/9/2008	131.00	81.90	146.50	92.66	135.74
10/10/2008	107.00	81.90	146.50	92.66	135.74
10/13/2008	114.00	81.90	146.50	92.66	135.74
10/14/2008	134.00	81.90	146.50	92.66	135.74
10/15/2008	124.00	81.90	146.50	92.66	135.74
10/16/2008	126.00	81.90	146.50	92.66	135.74
10/17/2008	126.00	81.90	146.50	92.66	135.74
10/20/2008	113.00	81.90	146.50	92.66	135.74
10/21/2008	130.00	81.90	146.50	92.66	135.74
10/22/2008	132.00	81.90	146.50	92.66	135.74
10/23/2008	122.00	81.90	146.50	92.66	135.74
10/24/2008	134.00	81.90	146.50	92.66	135.74
10/27/2008	125.00	81.90	146.50	92.66	135.74
10/28/2008	120.00	81.90	146.50	92.66	135.74
10/29/2008	120.00	81.90	146.50	92.66	135.74
10/30/2008	130.00	81.90	146.50	92.66	135.74
10/31/2008	129.00	81.90	146.50	92.66	135.74
11/3/2008	127.00	81.90	146.50	92.66	135.74
11/4/2008	114.00	81.90	146.50	92.66	135.74
11/5/2008	121.00	81.90	146.50	92.66	135.74
11/6/2008	127.00	81.90	146.50	92.66	135.74
11/7/2008	128.00	81.90	146.50	92.66	135.74
11/10/2008	110.00	81.90	146.50	92.66	135.74
11/11/2008	131.00	81.90	146.50	92.66	135.74
11/12/2008	135.00	81.90	146.50	92.66	135.74
11/13/2008	134.00	81.90	146.50	92.66	135.74
11/14/2008	129.00	81.90	146.50	92.66	135.74
11/17/2008	130.00	81.90	146.50	92.66	135.74
11/18/2008	131.00	81.90	146.50	92.66	135.74
11/19/2008	123.00	81.90	146.50	92.66	135.74
11/20/2008	135.00	81.90	146.50	92.66	135.74
11/21/2008	124.00	81.90	146.50	92.66	135.74
11/24/2008	134.00	81.90	146.50	92.66	135.74
11/25/2008	126.00	81.90	146.50	92.66	135.74
11/26/2008	129.00	81.90	146.50	92.66	135.74
12/1/2008	126.00	81.90	146.50	92.66	135.74
12/2/2008	117.00	81.90	146.50	92.66	135.74
12/3/2008	132.00	81.90	146.50	92.66	135.74
12/4/2008	116.00	81.90	146.50	92.66	135.74
12/5/2008	123.00	81.90	146.50	92.66	135.74
12/8/2008	123.00	81.90	146.50	92.66	135.74
12/9/2008	116.00	81.90	146.50	92.66	135.74
12/10/2008	133.00	81.90	146.50	92.66	135.74
12/11/2008	128.00	81.90	146.50	92.66	135.74
12/12/2008	132.00	81.90	146.50	92.66	135.74
12/15/2008	135.00	81.90	146.50	92.66	135.74
12/16/2008	127.00	81.90	146.50	92.66	135.74
12/17/2008	134.00	81.90	146.50	92.66	135.74
12/18/2008	127.00	81.90	146.50	92.66	135.74
12/19/2008	133.00	81.90	146.50	92.66	135.74
12/22/2008	126.00	81.90	146.50	92.66	135.74
12/23/2008	134.00	81.90	146.50	92.66	135.74
12/24/2008	131.00	81.90	146.50	92.66	135.74
12/29/2008	129.00	81.90	146.50	92.66	135.74

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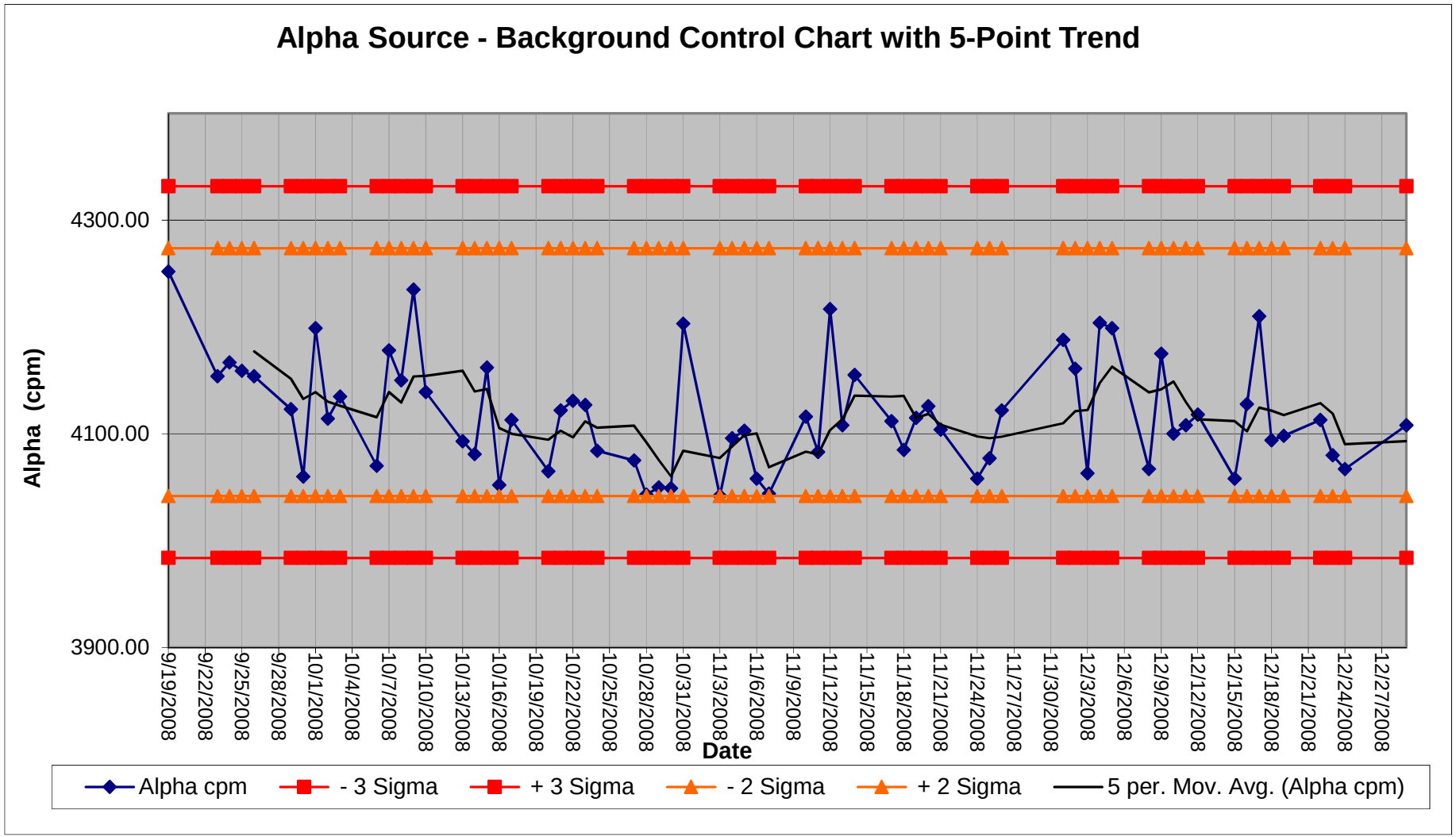
Ludlum Model 2360 S/N 184952



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Ludlum Model 2360, S/N 184952
CONTROL CHARTS

Alpha Source - Background cpm

Date	Alpha cpm	- 3 Sigma	+ 3 Sigma	- 2 Sigma	+ 2 Sigma
9/19/2008	4252.00	3983.76	4331.84	4041.77	4273.83
9/23/2008	4154.00	3983.76	4331.84	4041.77	4273.83
9/24/2008	4167.00	3983.76	4331.84	4041.77	4273.83
9/25/2008	4159.00	3983.76	4331.84	4041.77	4273.83
9/26/2008	4154.00	3983.76	4331.84	4041.77	4273.83
9/29/2008	4123.00	3983.76	4331.84	4041.77	4273.83
9/30/2008	4060.00	3983.76	4331.84	4041.77	4273.83
10/1/2008	4199.00	3983.76	4331.84	4041.77	4273.83
10/2/2008	4114.00	3983.76	4331.84	4041.77	4273.83
10/3/2008	4135.00	3983.76	4331.84	4041.77	4273.83
10/6/2008	4070.00	3983.76	4331.84	4041.77	4273.83
10/7/2008	4178.00	3983.76	4331.84	4041.77	4273.83
10/8/2008	4150.00	3983.76	4331.84	4041.77	4273.83
10/9/2008	4235.00	3983.76	4331.84	4041.77	4273.83
10/10/2008	4139.00	3983.76	4331.84	4041.77	4273.83
10/13/2008	4093.00	3983.76	4331.84	4041.77	4273.83
10/14/2008	4081.00	3983.76	4331.84	4041.77	4273.83
10/15/2008	4162.00	3983.76	4331.84	4041.77	4273.83
10/16/2008	4052.00	3983.76	4331.84	4041.77	4273.83
10/17/2008	4113.00	3983.76	4331.84	4041.77	4273.83
10/20/2008	4065.00	3983.76	4331.84	4041.77	4273.83
10/21/2008	4122.00	3983.76	4331.84	4041.77	4273.83
10/22/2008	4131.00	3983.76	4331.84	4041.77	4273.83
10/23/2008	4127.00	3983.76	4331.84	4041.77	4273.83
10/24/2008	4084.00	3983.76	4331.84	4041.77	4273.83
10/27/2008	4075.00	3983.76	4331.84	4041.77	4273.83
10/28/2008	4043.00	3983.76	4331.84	4041.77	4273.83
10/29/2008	4050.00	3983.76	4331.84	4041.77	4273.83
10/30/2008	4049.00	3983.76	4331.84	4041.77	4273.83
10/31/2008	4203.00	3983.76	4331.84	4041.77	4273.83
11/3/2008	4042.00	3983.76	4331.84	4041.77	4273.83
11/4/2008	4096.00	3983.76	4331.84	4041.77	4273.83
11/5/2008	4103.00	3983.76	4331.84	4041.77	4273.83
11/6/2008	4058.00	3983.76	4331.84	4041.77	4273.83
11/7/2008	4044.00	3983.76	4331.84	4041.77	4273.83
11/10/2008	4116.00	3983.76	4331.84	4041.77	4273.83
11/11/2008	4083.00	3983.76	4331.84	4041.77	4273.83
11/12/2008	4217.00	3983.76	4331.84	4041.77	4273.83
11/13/2008	4108.00	3983.76	4331.84	4041.77	4273.83
11/14/2008	4155.00	3983.76	4331.84	4041.77	4273.83
11/17/2008	4112.00	3983.76	4331.84	4041.77	4273.83
11/18/2008	4085.00	3983.76	4331.84	4041.77	4273.83
11/19/2008	4115.00	3983.76	4331.84	4041.77	4273.83
11/20/2008	4126.00	3983.76	4331.84	4041.77	4273.83
11/21/2008	4104.00	3983.76	4331.84	4041.77	4273.83
11/24/2008	4058.00	3983.76	4331.84	4041.77	4273.83
11/25/2008	4077.00	3983.76	4331.84	4041.77	4273.83
11/26/2008	4122.00	3983.76	4331.84	4041.77	4273.83
12/1/2008	4188.00	3983.76	4331.84	4041.77	4273.83
12/2/2008	4161.00	3983.76	4331.84	4041.77	4273.83
12/3/2008	4063.00	3983.76	4331.84	4041.77	4273.83
12/4/2008	4204.00	3983.76	4331.84	4041.77	4273.83
12/5/2008	4199.00	3983.76	4331.84	4041.77	4273.83
12/8/2008	4067.00	3983.76	4331.84	4041.77	4273.83
12/9/2008	4175.00	3983.76	4331.84	4041.77	4273.83
12/10/2008	4100.00	3983.76	4331.84	4041.77	4273.83
12/11/2008	4108.00	3983.76	4331.84	4041.77	4273.83
12/12/2008	4118.00	3983.76	4331.84	4041.77	4273.83
12/15/2008	4058.00	3983.76	4331.84	4041.77	4273.83
12/16/2008	4128.00	3983.76	4331.84	4041.77	4273.83
12/17/2008	4210.00	3983.76	4331.84	4041.77	4273.83
12/18/2008	4094.00	3983.76	4331.84	4041.77	4273.83
12/19/2008	4098.00	3983.76	4331.84	4041.77	4273.83
12/22/2008	4113.00	3983.76	4331.84	4041.77	4273.83
12/23/2008	4080.00	3983.76	4331.84	4041.77	4273.83
12/24/2008	4067.00	3983.76	4331.84	4041.77	4273.83
12/29/2008	4108.00	3983.76	4331.84	4041.77	4273.83

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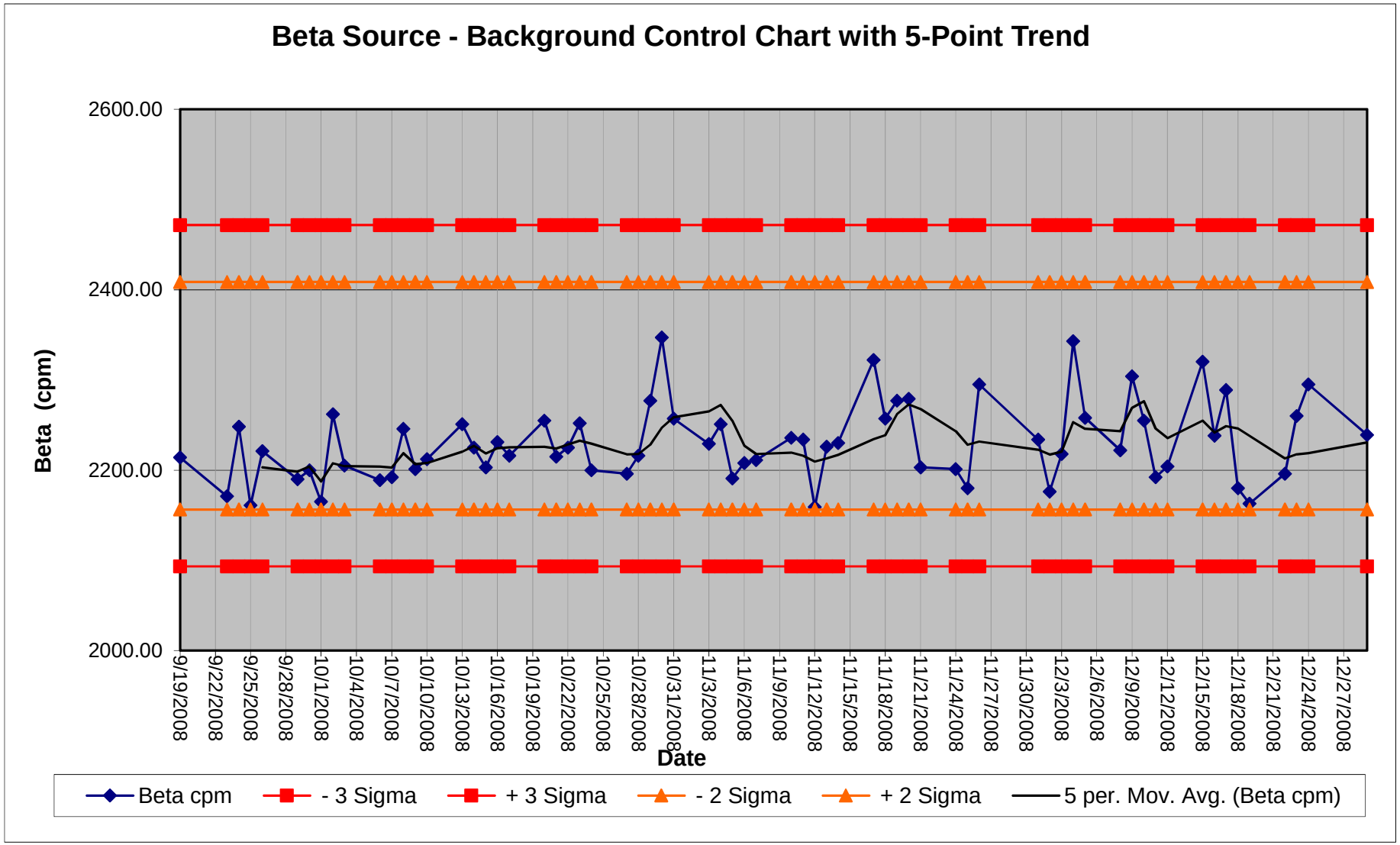
Ludlum Model 2360 S/N 184952



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Ludlum Model 2360, S/N 184952
CONTROL CHARTS

		Beta Source + Background cpm			
Date	Beta cpm	- 3 Sigma	+ 3 Sigma	- 2 Sigma	+ 2 Sigma
9/19/2008	2214.00	2093.32	2471.68	2156.38	2408.62
9/23/2008	2171.00	2093.32	2471.68	2156.38	2408.62
9/24/2008	2248.00	2093.32	2471.68	2156.38	2408.62
9/25/2008	2161.00	2093.32	2471.68	2156.38	2408.62
9/26/2008	2221.00	2093.32	2471.68	2156.38	2408.62
9/29/2008	2190.00	2093.32	2471.68	2156.38	2408.62
9/30/2008	2200.00	2093.32	2471.68	2156.38	2408.62
10/1/2008	2165.00	2093.32	2471.68	2156.38	2408.62
10/2/2008	2262.00	2093.32	2471.68	2156.38	2408.62
10/3/2008	2205.00	2093.32	2471.68	2156.38	2408.62
10/6/2008	2189.00	2093.32	2471.68	2156.38	2408.62
10/7/2008	2192.00	2093.32	2471.68	2156.38	2408.62
10/8/2008	2246.00	2093.32	2471.68	2156.38	2408.62
10/9/2008	2201.00	2093.32	2471.68	2156.38	2408.62
10/10/2008	2212.00	2093.32	2471.68	2156.38	2408.62
10/13/2008	2251.00	2093.32	2471.68	2156.38	2408.62
10/14/2008	2225.00	2093.32	2471.68	2156.38	2408.62
10/15/2008	2203.00	2093.32	2471.68	2156.38	2408.62
10/16/2008	2231.00	2093.32	2471.68	2156.38	2408.62
10/17/2008	2216.00	2093.32	2471.68	2156.38	2408.62
10/20/2008	2255.00	2093.32	2471.68	2156.38	2408.62
10/21/2008	2215.00	2093.32	2471.68	2156.38	2408.62
10/22/2008	2225.00	2093.32	2471.68	2156.38	2408.62
10/23/2008	2252.00	2093.32	2471.68	2156.38	2408.62
10/24/2008	2200.00	2093.32	2471.68	2156.38	2408.62
10/27/2008	2196.00	2093.32	2471.68	2156.38	2408.62
10/28/2008	2216.00	2093.32	2471.68	2156.38	2408.62
10/29/2008	2277.00	2093.32	2471.68	2156.38	2408.62
10/30/2008	2347.00	2093.32	2471.68	2156.38	2408.62
10/31/2008	2257.00	2093.32	2471.68	2156.38	2408.62
11/3/2008	2229.00	2093.32	2471.68	2156.38	2408.62
11/4/2008	2251.00	2093.32	2471.68	2156.38	2408.62
11/5/2008	2191.00	2093.32	2471.68	2156.38	2408.62
11/6/2008	2208.00	2093.32	2471.68	2156.38	2408.62
11/7/2008	2211.00	2093.32	2471.68	2156.38	2408.62
11/10/2008	2236.00	2093.32	2471.68	2156.38	2408.62
11/11/2008	2234.00	2093.32	2471.68	2156.38	2408.62
11/12/2008	2159.00	2093.32	2471.68	2156.38	2408.62
11/13/2008	2226.00	2093.32	2471.68	2156.38	2408.62
11/14/2008	2230.00	2093.32	2471.68	2156.38	2408.62
11/17/2008	2322.00	2093.32	2471.68	2156.38	2408.62
11/18/2008	2257.00	2093.32	2471.68	2156.38	2408.62
11/19/2008	2277.00	2093.32	2471.68	2156.38	2408.62
11/20/2008	2279.00	2093.32	2471.68	2156.38	2408.62
11/21/2008	2203.00	2093.32	2471.68	2156.38	2408.62
11/24/2008	2201.00	2093.32	2471.68	2156.38	2408.62
11/25/2008	2180.00	2093.32	2471.68	2156.38	2408.62
11/26/2008	2295.00	2093.32	2471.68	2156.38	2408.62
12/1/2008	2234.00	2093.32	2471.68	2156.38	2408.62
12/2/2008	2176.00	2093.32	2471.68	2156.38	2408.62
12/3/2008	2218.00	2093.32	2471.68	2156.38	2408.62
12/4/2008	2343.00	2093.32	2471.68	2156.38	2408.62
12/5/2008	2258.00	2093.32	2471.68	2156.38	2408.62
12/8/2008	2222.00	2093.32	2471.68	2156.38	2408.62
12/9/2008	2304.00	2093.32	2471.68	2156.38	2408.62
12/10/2008	2255.00	2093.32	2471.68	2156.38	2408.62
12/11/2008	2192.00	2093.32	2471.68	2156.38	2408.62
12/12/2008	2204.00	2093.32	2471.68	2156.38	2408.62
12/15/2008	2320.00	2093.32	2471.68	2156.38	2408.62
12/16/2008	2238.00	2093.32	2471.68	2156.38	2408.62
12/17/2008	2289.00	2093.32	2471.68	2156.38	2408.62
12/18/2008	2180.00	2093.32	2471.68	2156.38	2408.62
12/19/2008	2163.00	2093.32	2471.68	2156.38	2408.62
12/22/2008	2196.00	2093.32	2471.68	2156.38	2408.62
12/23/2008	2260.00	2093.32	2471.68	2156.38	2408.62
12/24/2008	2295.00	2093.32	2471.68	2156.38	2408.62
12/29/2008	2239.00	2093.32	2471.68	2156.38	2408.62

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ATTACHMENT 4

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Inst.# 102818		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	50	Pass
9/23/2008	50	Pass
9/24/2008	50	Pass
9/25/2008	50	Pass
9/26/2008	50	Pass
9/29/2008	50	Pass
9/30/2008	50	Pass
10/1/2008	50	Pass
10/2/2008	50	Pass
10/3/2008	50	Pass
10/6/2008	50	Pass
10/7/2008	50	Pass
10/8/2008	60	Pass
10/9/2008	60	Pass
10/10/2008	50	Pass
10/13/2008	50	Pass
10/14/2008	50	Pass
10/15/2008	50	Pass
10/16/2008	50	Pass
10/17/2008	60	Pass
10/20/2008	55	Pass
10/21/2008	60	Pass
10/22/2008	50	Pass
10/23/2008	50	Pass
10/24/2008	60	Pass
10/27/2008	50	Pass
10/28/2008	50	Pass
10/29/2008	45	Pass
10/30/2008	50	Pass
10/31/2008	50	Pass
11/3/2008	45	Pass
11/4/2008	50	Pass
11/5/2008	50	Pass
11/6/2008	50	Pass
11/7/2008	50	Pass
11/10/2008	45	Pass
11/11/2008	50	Pass
11/12/2008	45	Pass
11/13/2008	50	Pass
11/14/2008	50	Pass
11/17/2008	50	Pass
11/18/2008	50	Pass
11/19/2008	50	Pass
11/20/2008	50	Pass
11/21/2008	50	Pass
11/24/2008	50	Pass
11/25/2008	55	Pass
11/26/2008	50	Pass
12/1/2008	50	Pass
12/2/2008	45	Pass
12/3/2008	50	Pass
12/4/2008	50	Pass
12/5/2008	45	Pass

Inst.# 102818		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
9/19/2008	50		
9/19/2008	60		
9/19/2008	60		
9/19/2008	50		
9/19/2008	40		
9/19/2008	60		
9/19/2008	50		
9/19/2008	60		
9/19/2008	50		
9/19/2008	50		
	Average		
	53		

12/8/2008	50	Pass
12/9/2008	50	Pass
12/10/2008	45	Pass
12/11/2008	50	Pass
12/12/2008	50	Pass
12/15/2008	50	Pass
12/16/2008	50	Pass
12/17/2008	50	Pass
12/18/2008	55	Pass
12/19/2008	50	Pass
12/22/2008	50	Pass
12/23/2008	50	Pass
12/24/2008	50	Pass
12/29/2008	50	Pass

Inst.# 102818		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	2300	Pass
9/23/2008	2500	Pass
9/24/2008	2400	Pass
9/25/2008	2200	Pass
9/26/2008	2400	Pass
9/29/2008	2500	Pass
9/30/2008	2500	Pass
10/1/2008	2500	Pass
10/2/2008	2500	Pass
10/3/2008	2500	Pass
10/6/2008	2400	Pass
10/7/2008	2300	Pass
10/8/2008	2600	Pass
10/9/2008	2300	Pass
10/10/2008	2200	Pass
10/13/2008	2500	Pass
10/14/2008	2400	Pass
10/15/2008	2500	Pass
10/16/2008	2300	Pass
10/17/2008	2400	Pass
10/20/2008	2300	Pass
10/21/2008	2400	Pass
10/22/2008	2400	Pass
10/23/2008	2500	Pass
10/24/2008	2400	Pass
10/27/2008	2200	Pass
10/28/2008	2200	Pass
10/29/2008	2300	Pass
10/30/2008	2400	Pass
10/31/2008	2400	Pass
11/3/2008	2200	Pass
11/4/2008	2200	Pass
11/5/2008	2300	Pass
11/6/2008	2200	Pass
11/7/2008	2400	Pass
11/10/2008	2300	Pass
11/11/2008	2200	Pass
11/12/2008	2300	Pass
11/13/2008	2300	Pass
11/14/2008	2200	Pass
11/17/2008	2200	Pass
11/18/2008	2400	Pass
11/19/2008	2400	Pass
11/20/2008	2200	Pass
11/21/2008	2200	Pass
11/24/2008	2200	Pass
11/25/2008	2300	Pass
11/26/2008	2200	Pass
12/1/2008	2400	Pass
12/2/2008	2200	Pass
12/3/2008	2400	Pass
12/4/2008	2400	Pass
12/5/2008	2300	Pass

Inst.# 102818		Source Ser. #	4004-02
Initial Source Readings		Nuclide	Tc-99
Date	Result (cpm)		
9/19/2008	2200		
9/19/2008	2100		
9/19/2008	2300		
9/19/2008	2400		
9/19/2008	2300		
9/19/2008	2400		
9/19/2008	2300		
9/19/2008	2400		
9/19/2008	2300		
9/19/2008	2400		
	Average		
	2310		

12/8/2008	2100	Pass
12/9/2008	2400	Pass
12/10/2008	2200	Pass
12/11/2008	2100	Pass
12/12/2008	2100	Pass
12/15/2008	2200	Pass
12/16/2008	2100	Pass
12/17/2008	2200	Pass
12/18/2008	2100	Pass
12/19/2008	2100	Pass
12/22/2008	2200	Pass
12/23/2008	2100	Pass
12/24/2008	2400	Pass
12/29/2008	2300	Pass

Inst.# 229277		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	50	Pass
9/23/2008	50	Pass
9/24/2008	50	Pass
9/25/2008	50	Pass
9/26/2008	50	Pass
9/29/2008	50	Pass
9/30/2008	50	Pass
10/1/2008	50	Pass
10/2/2008	50	Pass
10/3/2008	50	Pass
10/10/2008	50	Pass
10/13/2008	50	Pass
10/14/2008	50	Pass
10/15/2008	50	Pass
10/16/2008	50	Pass
10/17/2008	55	Pass
10/20/2008	50	Pass
10/21/2008	55	Pass
10/22/2008	50	Pass
10/23/2008	50	Pass
10/24/2008	60	Pass
10/27/2008	50	Pass
10/28/2008	50	Pass
10/29/2008	45	Pass
10/30/2008	50	Pass
10/31/2008	50	Pass
11/3/2008	45	Pass
11/4/2008	50	Pass
11/5/2008	50	Pass
11/6/2008	50	Pass
11/7/2008	50	Pass
11/10/2008	45	Pass
11/11/2008	50	Pass
11/12/2008	50	Pass
11/13/2008	50	Pass
11/14/2008	50	Pass
11/17/2008	50	Pass
11/18/2008	50	Pass
11/19/2008	50	Pass
11/20/2008	50	Pass
11/21/2008	50	Pass
11/24/2008	50	Pass
11/25/2008	55	Pass
11/26/2008	50	Pass
12/1/2008	50	Pass
12/2/2008	60	Pass
12/3/2008	50	Pass
12/4/2008	50	Pass
12/5/2008	50	Pass
12/8/2008	50	Pass
12/9/2008	50	Pass
12/10/2008	50	Pass
12/11/2008	50	Pass

Inst.# 229277		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
9/19/2008	40		
9/19/2008	50		
9/19/2008	40		
9/19/2008	60		
9/19/2008	50		
9/19/2008	60		
9/19/2008	60		
9/19/2008	50		
9/19/2008	60		
9/19/2008	60		
	Average		
	53		

12/12/2008	50	Pass
12/15/2008	50	Pass
12/16/2008	50	Pass
12/17/2008	50	Pass
12/18/2008	50	Pass
12/19/2008	50	Pass
12/22/2008	50	Pass
12/23/2008	50	Pass
12/24/2008	50	Pass
12/29/2008	50	Pass

Inst.# 229277		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	2300	Pass
9/23/2008	2500	Pass
9/24/2008	2500	Pass
9/25/2008	2200	Pass
9/26/2008	2500	Pass
9/29/2008	2500	Pass
9/30/2008	2500	Pass
10/1/2008	2500	Pass
10/2/2008	2500	Pass
10/3/2008	2500	Pass
10/10/2008	2300	Pass
10/13/2008	2200	Pass
10/14/2008	2300	Pass
10/15/2008	2400	Pass
10/16/2008	2200	Pass
10/17/2008	2500	Pass
10/20/2008	2400	Pass
10/21/2008	2400	Pass
10/22/2008	2600	Pass
10/23/2008	2300	Pass
10/24/2008	2300	Pass
10/27/2008	2400	Pass
10/28/2008	2300	Pass
10/29/2008	2400	Pass
10/30/2008	2500	Pass
10/31/2008	2400	Pass
11/3/2008	2200	Pass
11/4/2008	2400	Pass
11/5/2008	2400	Pass
11/6/2008	2400	Pass
11/7/2008	2300	Pass
11/10/2008	2200	Pass
11/11/2008	2300	Pass
11/12/2008	2400	Pass
11/13/2008	2599	Pass
11/14/2008	2400	Pass
11/17/2008	2300	Pass
11/18/2008	2200	Pass
11/19/2008	2400	Pass
11/20/2008	2400	Pass
11/21/2008	2400	Pass
11/24/2008	2300	Pass
11/25/2008	2300	Pass
11/26/2008	2300	Pass
12/1/2008	2300	Pass
12/2/2008	2200	Pass
12/3/2008	2400	Pass
12/4/2008	2300	Pass
12/5/2008	2200	Pass
12/8/2008	2200	Pass
12/9/2008	2300	Pass
12/10/2008	2300	Pass
12/11/2008	2200	Pass

Inst.# 229277		Source Ser. #	4004-02
Initial Source Readings		Nuclide	Tc-99
Date	Result (cpm)		
9/19/2008	2400		
9/19/2008	2400		
9/19/2008	2300		
9/19/2008	2500		
9/19/2008	2300		
9/19/2008	2400		
9/19/2008	2300		
9/19/2008	2500		
9/19/2008	2300		
9/19/2008	2500		
	Average		
	2390		

12/12/2008	2200	Pass
12/15/2008	2200	Pass
12/16/2008	2200	Pass
12/17/2008	2300	Pass
12/18/2008	2400	Pass
12/19/2008	2300	Pass
12/22/2008	2200	Pass
12/23/2008	2200	Pass
12/24/2008	2300	Pass
12/29/2008	2200	Pass

Inst.# 1716		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	5	Pass
9/23/2008	5	Pass
9/24/2008	5	Pass
9/25/2008	5	Pass
9/26/2008	5	Pass
9/29/2008	5	Pass
9/30/2008	5	Pass
10/1/2008	5	Pass
10/2/2008	5	Pass
10/3/2008	5	Pass
10/6/2008	6	Pass
10/7/2008	5	Pass
10/8/2008	6	Pass
10/9/2008	6	Pass
10/10/2008	5	Pass
10/13/2008	5	Pass
10/14/2008	5	Pass
10/15/2008	5	Pass
10/16/2008	5	Pass
10/17/2008	6	Pass
10/20/2008	5	Pass
10/21/2008	6	Pass
10/22/2008	6	Pass
10/23/2008	5	Pass
10/24/2008	6	Pass
10/27/2008	5	Pass
10/28/2008	5	Pass
10/29/2008	5	Pass
10/30/2008	6	Pass
10/31/2008	5	Pass
11/3/2008	5	Pass
11/4/2008	5	Pass
11/5/2008	5	Pass
11/6/2008	5	Pass
11/7/2008	5	Pass
11/10/2008	5	Pass
11/11/2008	5	Pass
11/12/2008	5	Pass
11/13/2008	6	Pass
11/14/2008	5	Pass
11/17/2008	5	Pass
11/18/2008	5	Pass
11/19/2008	5	Pass
11/20/2008	6	Pass
11/21/2008	6	Pass
11/24/2008	5	Pass
11/25/2008	5	Pass
11/26/2008	6	Pass
12/1/2008	5	Pass
12/2/2008	6	Pass
12/3/2008	5	Pass
12/4/2008	6	Pass
12/5/2008	6	Pass

Inst.# 1716		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
9/19/2008	7		
9/19/2008	6		
9/19/2008	5		
9/19/2008	4		
9/19/2008	5		
9/19/2008	5		
9/19/2008	6		
9/19/2008	7		
9/19/2008	5		
9/19/2008	6		
	Average		
	6		

12/8/2008	5	Pass
12/9/2008	5	Pass
12/10/2008	5	Pass
12/11/2008	5	Pass
12/12/2008	5	Pass
12/15/2008	5	Pass
12/16/2008	5	Pass
12/17/2008	5	Pass
12/18/2008	6	Pass
12/19/2008	5	Pass
12/22/2008	5	Pass
12/23/2008	6	Pass
12/24/2008	5	Pass
12/29/2008	6	Pass

Inst.# 1716		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	4000	Pass
9/23/2008	4000	Pass
9/24/2008	4000	Pass
9/25/2008	4000	Pass
9/26/2008	4000	Pass
9/29/2008	4000	Pass
9/30/2008	4000	Pass
10/1/2008	4000	Pass
10/2/2008	4000	Pass
10/3/2008	4000	Pass
10/6/2008	3900	Pass
10/7/2008	4000	Pass
10/8/2008	3900	Pass
10/9/2008	4000	Pass
10/10/2008	4000	Pass
10/13/2008	4000	Pass
10/14/2008	4000	Pass
10/15/2008	4000	Pass
10/16/2008	4100	Pass
10/17/2008	4000	Pass
10/20/2008	4000	Pass
10/21/2008	4000	Pass
10/22/2008	4000	Pass
10/23/2008	4000	Pass
10/24/2008	4000	Pass
10/27/2008	4000	Pass
10/28/2008	4000	Pass
10/29/2008	4000	Pass
10/30/2008	3900	Pass
10/31/2008	4200	Pass
11/3/2008	4000	Pass
11/4/2008	4000	Pass
11/5/2008	4000	Pass
11/6/2008	4000	Pass
11/7/2008	4000	Pass
11/10/2008	3900	Pass
11/11/2008	4100	Pass
11/12/2008	4000	Pass
11/13/2008	4000	Pass
11/14/2008	4500	Pass
11/17/2008	4000	Pass
11/18/2008	4000	Pass
11/19/2008	4400	Pass
11/20/2008	4300	Pass
11/21/2008	4000	Pass
11/24/2008	4000	Pass
11/25/2008	4000	Pass
11/26/2008	4000	Pass
12/1/2008	4000	Pass
12/2/2008	4000	Pass
12/3/2008	3900	Pass
12/4/2008	4000	Pass
12/5/2008	4100	Pass

Inst.# 1716		Source Ser. #	1696-03
Initial Source Readings		Nuclide	Cs-137
Date	Result (cpm)		
9/19/2008	4000		
9/19/2008	4000		
9/19/2008	4000		
9/19/2008	4000		
9/19/2008	4200		
9/19/2008	4000		
9/19/2008	4000		
9/19/2008	4000		
9/19/2008	4200		
9/19/2008	4000		
	Average		
	4040		

12/8/2008	4000	Pass
12/9/2008	4000	Pass
12/10/2008	4000	Pass
12/11/2008	4000	Pass
12/12/2008	4000	Pass
12/15/2008	4000	Pass
12/16/2008	4000	Pass
12/17/2008	4000	Pass
12/18/2008	4000	Pass
12/19/2008	4000	Pass
12/22/2008	4000	Pass
12/23/2008	4000	Pass
12/24/2008	4000	Pass
12/29/2008	4000	Pass

Inst.# 115157		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	1320	Pass
9/23/2008	1345	Pass
9/24/2008	1222	Pass
9/25/2008	1273	Pass
9/26/2008	1264	Pass
9/29/2008	1414	Pass
9/30/2008	1223	Pass
10/1/2008	1299	Pass
10/2/2008	1289	Pass
10/3/2008	1240	Pass
10/6/2008	1384	Pass
10/7/2008	1286	Pass
10/8/2008	1546	Pass
10/9/2008	1399	Pass
10/10/2008	1339	Pass
10/13/2008	1487	Pass
10/14/2008	1278	Pass
10/15/2008	1336	Pass
10/16/2008	1403	Pass
10/17/2008	1345	Pass
10/20/2008	1284	Pass
10/21/2008	1410	Pass
10/22/2008	1483	Pass
10/23/2008	1284	Pass
10/24/2008	1307	Pass
10/27/2008	1391	Pass
10/30/2008	1352	Pass
10/31/2008	1378	Pass
11/3/2008	1536	Pass
11/4/2008	1271	Pass
11/5/2008	1321	Pass
11/6/2008	1479	Pass
11/7/2008	1483	Pass
11/7/2008	1302	Pass
11/10/2008	1410	Pass
11/11/2008	1543	Pass
11/12/2008	1385	Pass
11/13/2008	1437	Pass
11/14/2008	1418	Pass
11/17/2008	1312	Pass
11/18/2008	1361	Pass
11/19/2008	1374	Pass
11/20/2008	1469	Pass
11/21/2008	1301	Pass
11/24/2008	1452	Pass
11/25/2008	1554	Pass
11/26/2008	1389	Pass
12/1/2008	1216	Pass
12/2/2008	1460	Pass
12/3/2008	1543	Pass
12/4/2008	1571	Pass
12/5/2008	1526	Pass
12/8/2008	1519	Pass

Inst.# 115157		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
9/19/2008	1302		
9/19/2008	1354		
9/19/2008	1314		
9/19/2008	1316		
9/19/2008	1356		
9/19/2008	1237		
9/19/2008	1277		
9/19/2008	1282		
9/19/2008	1367		
9/19/2008	1315		
	Average		
	1312		

12/9/2008	1428	Pass
12/10/2008	1548	Pass
12/11/2008	1556	Pass
12/12/2008	1482	Pass
12/15/2008	1504	Pass
12/16/2008	1466	Pass
12/17/2008	1438	Pass
12/18/2008	1429	Pass
12/19/2008	1508	Pass

Inst.# 115157		
QC Daily Source		
Date	Result (cpm)	P/F
9/19/2008	376765	Pass
9/23/2008	403946	Pass
9/24/2008	353111	Pass
9/25/2008	397741	Pass
9/26/2008	379031	Pass
9/29/2008	353881	Pass
9/30/2008	378797	Pass
10/1/2008	366010	Pass
10/2/2008	383656	Pass
10/3/2008	348850	Pass
10/6/2008	368976	Pass
10/7/2008	388455	Pass
10/8/2008	396360	Pass
10/9/2008	397683	Pass
10/10/2008	400136	Pass
10/13/2008	392902	Pass
10/14/2008	365050	Pass
10/15/2008	399607	Pass
10/16/2008	374415	Pass
10/17/2008	373179	Pass
10/20/2008	386203	Pass
10/21/2008	396325	Pass
10/22/2008	400420	Pass
10/23/2008	375754	Pass
10/24/2008	352816	Pass
10/27/2008	354125	Pass
10/30/2008	398591	Pass
10/31/2008	372998	Pass
11/3/2008	382810	Pass
11/4/2008	401314	Pass
11/5/2008	387654	Pass
11/6/2008	346605	Pass
11/7/2008	356571	Pass
11/10/2008	393593	Pass
11/11/2008	389586	Pass
11/12/2008	389249	Pass
11/13/2008	389238	Pass
11/14/2008	361943	Pass
11/17/2008	385307	Pass
11/18/2008	398197	Pass
11/19/2008	377063	Pass
11/20/2008	377042	Pass
11/21/2008	380001	Pass
11/24/2008	405168	Pass
11/25/2008	340564	Pass
11/26/2008	352534	Pass
12/1/2008	364351	Pass
12/2/2008	367277	Pass
12/3/2008	363920	Pass
12/4/2008	354576	Pass
12/5/2008	374941	Pass
12/8/2008	396240	Pass
12/9/2008	390380	Pass

Inst.# 115157		Source Ser. #	1696-03
Initial Source Readings		Nuclide	Cs-137
Date	Result (cpm)		
9/19/2008	374676		
9/19/2008	375941		
9/19/2008	377381		
9/19/2008	376364		
9/19/2008	376004		
9/19/2008	375054		
9/19/2008	375384		
9/19/2008	375680		
9/19/2008	376376		
9/19/2008	376164		
	Average		
	375902		

12/10/2008	384563	Pass
12/11/2008	369129	Pass
12/12/2008	367132	Pass
12/15/2008	356786	Pass
12/16/2008	376382	Pass
12/17/2008	404461	Pass
12/18/2008	393753	Pass
12/19/2008	383231	Pass

Inst.# 138377		
QC Daily Source		
Date	Result (cpm)	P/F
9/23/2008	18187	Pass
9/24/2008	17889	Pass
9/25/2008	19165	Pass
9/26/2008	18840	Pass
9/29/2008	19744	Pass
9/30/2008	18067	Pass
10/1/2008	18633	Pass
10/2/2008	18067	Pass
10/3/2008	17366	Pass
10/6/2008	18197	Pass
10/7/2008	17811	Pass
10/8/2008	19768	Pass
10/9/2008	17880	Pass
10/10/2008	17583	Pass
10/13/2008	18075	Pass
10/14/2008	18765	Pass
10/15/2008	18934	Pass
10/16/2008	18655	Pass
10/17/2008	18729	Pass
10/20/2008	17921	Pass
10/21/2008	19364	Pass
10/22/2008	18895	Pass
10/23/2008	17582	Pass
10/24/2008	18198	Pass
10/27/2008	19429	Pass
10/28/2008	18895	Pass
10/29/2008	19235	Pass
10/30/2008	19675	Pass
11/6/2008	18360	Pass
11/7/2008	18843	Pass
11/14/2008	18015	Pass
11/17/2008	17947	Pass
11/18/2008	18973	Pass
11/19/2008	18481	Pass
11/20/2008	18335	Pass
11/21/2008	20376	Pass
11/24/2008	19239	Pass
11/25/2008	19763	Pass
11/26/2008	18884	Pass
12/1/2008	18880	Pass
12/2/2008	19876	Pass
12/3/2008	19696	Pass
12/4/2008	19518	Pass
12/5/2008	18977	Pass
12/8/2008	18422	Pass
12/9/2008	19923	Pass
12/10/2008	20315	Pass
12/11/2008	20433	Pass
12/12/2008	21332	Pass

Inst.# 138377		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
9/23/2008	18058		
9/23/2008	18042		
9/23/2008	17794		
9/23/2008	18040		
9/23/2008	17871		
9/23/2008	18220		
9/23/2008	18284		
9/23/2008	18284		
9/23/2008	18223		
9/23/2008	18384		
	Average		
	18120		

Inst.# 138377		
QC Daily Source		
Date	Result (cpm)	P/F
9/23/2008	432347	Pass
9/24/2008	436299	Pass
9/25/2008	410877	Pass
9/26/2008	463122	Pass
9/29/2008	461631	Pass
9/30/2008	454356	Pass
10/1/2008	436859	Pass
10/2/2008	435483	Pass
10/3/2008	434124	Pass
10/6/2008	452118	Pass
10/7/2008	452643	Pass
10/8/2008	452834	Pass
10/9/2008	448642	Pass
10/10/2008	448981	Pass
10/13/2008	456378	Pass
10/14/2008	412874	Pass
10/15/2008	429165	Pass
10/16/2008	447446	Pass
10/17/2008	444000	Pass
10/20/2008	418858	Pass
10/21/2008	396545	Pass
10/22/2008	456601	Pass
10/23/2008	454466	Pass
10/24/2008	457748	Pass
10/27/2008	396690	Pass
10/28/2008	463118	Pass
10/29/2008	462191	Pass
10/30/2008	456982	Pass
11/6/2008	430041	Pass
11/7/2008	430432	Pass
11/14/2008	446902	Pass
11/17/2008	461853	Pass
11/18/2008	460823	Pass
11/19/2008	423395	Pass
11/20/2008	432920	Pass
11/21/2008	410642	Pass
11/24/2008	460909	Pass
11/25/2008	424203	Pass
11/26/2008	453197	Pass
12/1/2008	425306	Pass
12/2/2008	428351	Pass
12/3/2008	446529	Pass
12/4/2008	469489	Pass
12/5/2008	454367	Pass
12/8/2008	431485	Pass
12/9/2008	432966	Pass
12/10/2008	435753	Pass
12/11/2008	440934	Pass
12/12/2008	436621	Pass

Inst.# 138377		Source Ser. #	1696-03
Initial Source Readings		Nuclide	Cs-137
Date	Result (cpm)		
9/23/2008	431724		
9/23/2008	432439		
9/23/2008	432559		
9/23/2008	432349		
9/23/2008	432081		
9/23/2008	431977		
9/23/2008	432090		
9/23/2008	432201		
9/23/2008	431156		
9/23/2008	431788		
	Average		
	432036		

Inst.# 149952		
QC Daily Source		
Date	Result (cpm)	P/F
9/23/2008	17724	Pass
9/24/2008	17167	Pass
9/25/2008	19362	Pass
9/26/2008	18303	Pass
9/29/2008	18761	Pass
9/30/2008	18894	Pass
10/1/2008	18460	Pass
10/2/2008	18113	Pass
10/3/2008	17151	Pass
10/6/2008	18869	Pass
10/7/2008	17705	Pass
10/8/2008	19629	Pass
10/9/2008	17594	Pass
10/10/2008	17652	Pass
10/13/2008	17748	Pass
10/14/2008	18845	Pass
10/15/2008	18874	Pass
10/16/2008	18454	Pass
10/17/2008	18574	Pass
10/20/2008	17673	Pass
10/21/2008	19500	Pass
10/22/2008	18686	Pass
10/23/2008	17762	Pass
10/24/2008	18323	Pass
10/27/2008	19005	Pass
10/28/2008	18747	Pass
10/29/2008	18490	Pass
10/30/2008	18976	Pass

Inst.# 149952		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
9/23/2008	17858		
9/23/2008	17815		
9/23/2008	17547		
9/23/2008	18050		
9/23/2008	17639		
9/23/2008	18264		
9/23/2008	18607		
9/23/2008	18408		
9/23/2008	18660		
9/23/2008	18633		
	Average		
	18148		

Inst.# 149952		
QC Daily Source		
Date	Result (cpm)	P/F
9/23/2008	458971	Pass
9/24/2008	444096	Pass
9/25/2008	449867	Pass
9/26/2008	461404	Pass
9/29/2008	453140	Pass
9/30/2008	443503	Pass
10/1/2008	450230	Pass
10/2/2008	451353	Pass
10/3/2008	458821	Pass
10/6/2008	448776	Pass
10/7/2008	469402	Pass
10/8/2008	459080	Pass
10/9/2008	446635	Pass
10/10/2008	447137	Pass
10/13/2008	457620	Pass
10/14/2008	425936	Pass
10/15/2008	452493	Pass
10/16/2008	447694	Pass
10/17/2008	447265	Pass
10/20/2008	449355	Pass
10/21/2008	458033	Pass
10/22/2008	460103	Pass
10/23/2008	459831	Pass
10/24/2008	455771	Pass
10/27/2008	394630	Pass
10/28/2008	428912	Pass
10/29/2008	431775	Pass
10/30/2008	449752	Pass

Inst.# 149952		Source Ser. #	1696-03
Initial Source Readings		Nuclide	Cs-137
Date	Result (cpm)		
9/23/2008	458816		
9/23/2008	458951		
9/23/2008	458699		
9/23/2008	459262		
9/23/2008	457920		
9/23/2008	458874		
9/23/2008	458289		
9/23/2008	459124		
9/23/2008	458547		
9/23/2008	458723		
	Average		
	458721		

Inst.# 125457		
QC Daily Source		
Date	Result (cpm)	P/F
10/30/2008	15766	Pass
11/3/2008	16127	Pass
11/4/2008	16705	Pass
11/5/2008	17248	Pass
11/6/2008	17348	Pass
11/7/2008	17309	Pass
11/10/2008	17120	Pass
11/11/2008	17833	Pass
11/12/2008	17856	Pass
11/13/2008	17923	Pass
11/14/2008	17994	Pass

Inst.# 125457		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
10/30/2008	16689		
10/30/2008	16602		
10/30/2008	16414		
10/30/2008	16147		
10/30/2008	16054		
10/30/2008	16236		
10/30/2008	16421		
10/30/2008	16285		
10/30/2008	16231		
10/30/2008	16430		
	Average		
	16351		

Inst.# 125457		
QC Daily Source		
Date	Result (cpm)	P/F
10/30/2008	402867	Pass
11/3/2008	415732	Pass
11/4/2008	406856	Pass
11/5/2008	418946	Pass
11/6/2008	405853	Pass
11/7/2008	395743	Pass
11/10/2008	388070	Pass
11/11/2008	393887	Pass
11/12/2008	418230	Pass
11/13/2008	407597	Pass
11/14/2008	338415	Pass

Inst.# 125457		Source Ser. #	1696-03
Initial Source Readings		Nuclide	Cs-137
Date	Result (cpm)		
10/30/2008	403621		
10/30/2008	402197		
10/30/2008	402225		
10/30/2008	403105		
10/30/2008	403723		
10/30/2008	402724		
10/30/2008	403426		
10/30/2008	403797		
10/30/2008	403595		
10/30/2008	403685		
	Average		
	403210		

Inst.# 81308		
QC Daily Source		
Date	Result (cpm)	P/F
10/30/2008	16299	Pass
11/3/2008	16464	Pass
11/4/2008	16542	Pass
11/5/2008	17205	Pass
11/6/2008	17459	Pass
11/7/2008	17230	Pass
11/10/2008	17260	Pass
11/11/2008	17786	Pass
11/12/2008	17856	Pass
11/13/2008	18076	Pass
11/14/2008	17765	Pass
11/17/2008	17380	Pass
11/18/2008	17879	Pass
11/19/2008	17969	Pass
11/20/2008	18181	Pass
11/21/2008	17655	Pass
11/24/2008	18684	Pass
11/25/2008	17654	Pass
11/26/2008	18065	Pass
12/1/2008	18712	Pass
12/2/2008	17653	Pass
12/3/2008	18853	Pass
12/4/2008	19181	Pass
12/5/2008	18833	Pass
12/8/2008	17162	Pass

Inst.# 81308		Source Ser. #	
Initial Source Readings		Nuclide	Bkg
Date	Result (cpm)		
10/30/2008	17365		
10/30/2008	15453		
10/30/2008	15966		
10/30/2008	16139		
10/30/2008	15974		
10/30/2008	15784		
10/30/2008	15669		
10/30/2008	15909		
10/30/2008	16065		
10/30/2008	15844		
	Average		
	16017		

Inst.# 81308		
QC Daily Source		
Date	Result (cpm)	P/F
10/30/2008	408537	Pass
11/3/2008	401295	Pass
11/4/2008	409431	Pass
11/5/2008	409876	Pass
11/6/2008	394044	Pass
11/7/2008	399570	Pass
11/10/2008	400153	Pass
11/11/2008	401036	Pass
11/12/2008	397695	Pass
11/13/2008	399205	Pass
11/14/2008	341865	Pass
11/17/2008	393008	Pass
11/18/2008	400017	Pass
11/19/2008	352596	Pass
11/20/2008	398925	Pass
11/21/2008	390775	Pass
11/24/2008	372669	Pass
11/25/2008	406119	Pass
11/26/2008	391426	Pass
12/1/2008	433073	Pass
12/2/2008	397362	Pass
12/3/2008	410683	Pass
12/4/2008	419895	Pass
12/5/2008	426753	Pass
12/8/2008	408435	Pass

Inst.# 81308		Source Ser. #	1696-03
Initial Source Readings		Nuclide	Cs-137
Date	Result (cpm)		
10/30/2008	408853		
10/30/2008	406933		
10/30/2008	408516		
10/30/2008	407418		
10/30/2008	408417		
10/30/2008	406538		
10/30/2008	407662		
10/30/2008	408145		
10/30/2008	408470		
10/30/2008	407984		
	Average		
	407894		