



**DEPARTMENT OF THE NAVY**  
SOUTHWEST DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
1220 PACIFIC HIGHWAY  
SAN DIEGO, CA 92132-5190

5090  
Ser 06CH.AM/0350000  
April 2, 2001

Dr. Lynn Suer  
Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

Dear Dr. Suer:

Subj: EXCEEDANCE OF THE NPDES DISCHARGE LIMIT FOR ORGANICS IN THE  
WEST-SIDE AQUIFER TREATMENT SYSTEM, MOFFETT FEDERAL AIRFIELD,  
MOFFETT FIELD, CALIFORNIA

In accordance with NPDES No. CAG912003, Order No. 99-051, Self-Monitoring Program, this formal notification is being provided to the Regional Water Quality Control Board (RWQCB) of a discharge exceedance of organics in the West-Side Aquifers Treatment System (WATS) effluent located at Moffett Federal Airfield, Moffett Field, California. This formal notification is a follow-up to the verbal notification that was given to the RWQCB on March 27, 2001. The enclosure to this letter provides additional information, including the referenced tables.

#### **Time and Date of Exceedance**

On March 26, 2001 at 1130 the analytical results from the March 1, 2001 NPDES sample event of the West-Side Aquifer Treatment System (WATS) were received. These results indicated a potential exceedance of TPH-gasoline (120 µg/l) and acetone (29 µg/l) in the WATS effluent (Table 1).

The initial TPH-gasoline gas chromatograph contained peaks within the gasoline range, but did not appear to be gasoline. Therefore, the results were qualified as 'not a gasoline pattern.' The confirmation samples of the WATS effluent did not detect TPH-gasoline. The indication for TPH-gasoline may have been a laboratory anomaly.

The confirmation samples did confirm the presence of acetone (77 µg/l) in the WATS effluent. In accordance with the NPDES Self Monitoring Program the WATS was shut down on March 29, 2001 at 1630. Table 2 provides the chronology of events, and Table 3 summarizes applicable NPDES self-monitoring requirements.

#### **Duration of Exceedance**

Starting in July 2000, acetone appeared generally consistently in the WATS effluent in the NPDES monthly sampling at concentrations between 14 and 22 µg/l. Table 4, "Exceedance Trends" shows the concentrations for the exceedances on a monthly basis. At that time the acetone concentrations were thought to be related to laboratory contamination, since acetone is a common laboratory contaminant.

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### Estimated Volume of Discharge Exceeding Limit

The estimated total volume of acetone discharged since July 2000 is 5.1 lbs.

### Method Used in Estimating Volume

The average concentration of acetone in the discharge for 3<sup>rd</sup> and 4<sup>th</sup> quarter 2000 and the volume for each quarter was used to estimate the volume. The calculations can be found in Table 5 of the enclosure.

### Person Notified of Exceedance

Dr. Lynn Suer, RWQCB was notified at 1130 on March 27, 2001, that a potential exceedance in the NPDES sampling had occurred for organics. Dr. Suer was also notified upon receipt of the confirming analytical data at 1230 on March 28, 2001 and was conferred with in determining to shut off the WATS.

If you have questions or comments, please contact either Ms. Mary Parker or me in any of the following ways:

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Sincerely,



ANDREA MUCKERMAN  
BRAC Environmental Coordinator,  
By direction of the Commander

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April 2, 2001

Copy to:  
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## ENCLOSURE

### Organic Exceedance at WATS Effluent April 2, 2001 Moffett Federal Airfield

#### Potential Exceedance

The 2<sup>nd</sup> Monthly NPDES Sample for the first quarter 2001 was taken on March 1, 2001 with the analytical results received March 26, 2001. The results have been received and a Quality Control check has been performed. The results for WATS showed a potential exceedance of TPH-Gasoline and Acetone, as shown in Table 1.

Constituent	Discharge Limit (PQL)	WATS Influent	WATS Effluent
TPH-Gasoline	50 µg/l	660 µg/l	120 µg/l <sup>a</sup>
Acetone	5 µg/l	<5 µg/l	29 µg/l

Table 1 – Quarterly NPDES Sampling results

<sup>a</sup> – not a gasoline pattern.

#### Confirmation of Exceedance

Duplicate confirmation samples of the WATS effluent were taken on March 26, 2001 and analyzed for Acetone and TPH-gas. Duplicates were taken to assure result accuracy.

Constituent	Discharge Limit (PQL)	WATS Effluent	WATS Effluent - Duplicate
TPH-Gasoline	50 µg/l	Not detected	Not detected
Acetone	5 µg/l	77 µg/l	76 µg/l

The original TPH-gasoline results were further assessed by the laboratory. There was a peak on the chromatogram at C5-C6 which was reported at 0.12 mg/L. This is not gasoline since gasoline has a series of peaks from C4-C10. However, since a peak was identified within that range, the laboratory reported this value and qualified it as 'not a gasoline pattern.' The laboratory then compared the chromatogram to the GC/MS for the 8260 analysis. Only the peak for the acetone identified. This was done in an attempt to identify a peak in the gasoline/FID run, but the peak was not confirmed. Considering the results from the confirmation samples, the initial indication for TPH-gasoline may have been an anomaly.

The confirmation tests did confirm the presence of acetone in the WATS Effluent.

#### Chronology of Events

The following table identifies those events that have occurred to date and those required with due dates. Also identified is the requirement reference for that activity.

<b>Events</b>	<b>Date</b>	<b>Requirements/Comment</b>
Sample Analysis Results indicate potential exceedance for Acetone and TPH-gasoline	March 26, 2001 - 1300	
Confirmation samples were taken	March 26, 2001 - 1500	In accordance with Self Monitoring Program, D.1.d.1
Verbal notification of potential exceedance given to the Water Board	March 27, 2001 - 1130	In accordance with Self Monitoring Program, H.5  Notification was given to Dr. Lynn Suer of the Regional Water Board
Receipt of confirmation data	March 28, 2001 – 1230	In accordance with Self Monitoring Program, D.1.d.1  Analytical data confirmed the presence of acetone in the effluent of WATS.  TPH-Gasoline was not detected.
Based upon the results of analytical results, determine if system to be shut down	March 28, 2001 – 1600	In accordance with Self Monitoring Program, H.5  As discussed with the Water Board, it was decided to shut off the system by the end of the day, Thursday, March 29, 2001. This would allow for the collection of additional process samples as needed.
Based upon the results of analytical results, sample the receiving water	March 28, 2001	In accordance with Self Monitoring Program, Table A
Receiving water was sampled	March 28, 2001 - 1400	In accordance with Self Monitoring Program, Table A
Additional process samples taken to aid in troubleshooting activities	March 28 – 29, 2001	
WATS was shut down	March 29, 2001 - 1630	In accordance with Self Monitoring Program, H.5
Provide written confirmation notification to the RWQCB	April 2, 2001	In accordance with Self Monitoring Program, H.5

Events	Date	Requirements/Comment
Provide verbal notification of system shut down, reason for shut down, proposed corrective action and estimated start-up date. (within 5 days of shutdown)	April 3, 2001	In accordance with Self Monitoring Program, H.5
Provide written notification of system shut down (within 15 days of shut down)	April 13, 2001	In accordance with Self Monitoring Program, H.5
Provide notification of system restart	At least 15 days before start up	In accordance with Self Monitoring Program, H.5

**Table 2 – Chronology of Events**

### NPDES Self-Monitoring Program Requirements

Listed in the table below are the applicable NPDES Self-Monitoring Program Requirements.

Reference	Requirement
paragraph D.1.d.1	"If analytical results are received showing any instantaneous maximum limit is exceeded for any organic constituent, a confirmation sample shall be taken within 24 hours and results known within 24 hours of sampling."
Paragraph H.5	"Discharges shall notify the Board within <b>one day</b> as soon as the discharges or their agents have knowledge of the incident and confirm this notification in writing within 5 working days of the initial notification. The written report shall include time, date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring."
Paragraph H.5	"If a violation of INSTANTANEOUS MAXIMUM LIMITS should occur ( <b>and be confirmed</b> ), the discharge shall be directed to a holding tank and contained, or the extraction and treatment system shall be shut down. The content of the holding tank shall be retreated until the retreated effluent is in compliance, or be disposed in accord with the provisions of Chapter 15, Title 23, California Code of Regulations."
Table A, "Schedule for Sampling, Measurements, and Analysis"	Requires that the Receiving Water be analyzed for VOC Method 8260 or equivalent upon confirmation of exceedance.

**Table 3 – Self-Monitoring Program Requirements**

## Potential Causes of Exceedance

The Navy is currently looking at the corrective actions necessary to enable compliance with the NPDES Self-Monitoring Program.

### ACTION:

#### System Configuration:

1. Determine if minor modifications can be made to the system to ensure compliance. As an interim corrective action, the Navy is currently looking into plumbing the effluent from the air stripper through the existing GAC units, which will remove the organic constituents.
2. Determine if system configuration is adequate for removing contaminants. Identify necessary modifications for long-term compliance.
3. Determine when system start-up may occur. If the system will be shut down for more than 120 hours, additional notifications and reporting will be performed in accordance with the NPDES Self-Monitoring Program.

#### Contamination Sources:

1. Identify the source of the Acetone within the system. Determine if Acetone is being introduced into the system or the contaminants are being decomposed to Acetone.

## NPDES Exceedance Trends for 2000

The following table provides the month results of exceedances for EATS and WATS effluents.

Month	EATS	WATS
January	NA Acetone	25 ppb Acetone / 180 G ppb TPH-gasoline
February	5.9 U ppb Acetone	26 U ppb Acetone
March	4 J ppb Acetone	16 ppb Acetone
April	4 U ppb Acetone	21 ppb Acetone (9.6 ppb in trip blank)
May	5.4 U ppb Acetone (6.4 ppb acetone in trip blank)	27 ppb Acetone / 51 ppb TPH-gasoline (6.4 ppb acetone in trip blank)
June	4 U ppb Acetone	13 B ppb Acetone
July	4 U ppb Acetone	14 ppb Acetone
August	4 U ppb Acetone	22 ppb Acetone
September	4 U ppb Acetone	21 B ppb Acetone
October	4 U ppb Acetone	17 ppb Acetone
November	4 U ppb Acetone	14 ppb Acetone
December	4 U ppb Acetone	17 ppb Acetone / 72 ppb copper

**Table 4 – Exceedance Trends (excluding pH) during 2000**

Notes: NA = Indicates that the sample was not analyzed for the analyte  
 U = Indicates that the analyte was not detected at the reported quantity  
 B = Indicates laboratory method blank contamination  
 G = Indicates multiple peaks, but does not resemble a typical fuel pattern  
 J = Indicates that the value is qualitatively identified, but is reported as an estimated quantity

### Method Used for Estimating Volume

Beginning in July 2000, the concentration identified for each month was multiplied by the gallons of water processed during that month and converted to pounds. The table below shows each month's mass discharged and a total discharged for the duration.

Month	Volume Processed (gallons)	Acetone Concentration (ppb)	Pounds of Acetone
July 2000	1420841	14	0.166
August 2000	2291134	22	0.420
September 2000	1468912	21	0.257
October 2000	1943575	17	0.275
November 2000	1270747	14	0.148
December 2000	3468203	17	0.492
January 2001	3862450	21	0.676
February 2001	2318598	29	0.561
March 2001	3289992	77	2.113
<b>TOTAL</b>			<b>5.109</b>

**Table 5 Method Used for Estimating Volume**

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