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Governor  
DIANE DENISH  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*DOE Oversight Bureau*

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RON CURRY  
Secretary  
JON GOLDSTEIN  
Deputy Secretary

February 22, 2008

Gayle Dye, Ph.D., POC  
U.S. Department of Energy  
P.O. Box 5400  
Albuquerque, New Mexico 87185-5400

**RE: 2007 NMED/DOE-Oversight Bureau Data Submittal Results from Monitoring Well SWTA3-MW4 at Sandia National Laboratories**

Dear Dr. Dye

Enclosed are the analytical results from samples submitted to Pinnacle Laboratories and General Engineering Laboratories for organics and high explosives analyses. On December 21, 2006 the DOE Oversight Bureau, Sandia Oversight Section (DOE-OB/SOS) of the New Mexico Environment Department (NMED) collected split groundwater samples with Sandia National Laboratories New Mexico (SNL/NM) at Groundwater Protection Program (GWPP) monitoring well SWTA3- MW4.

Data Assessment

NMED/DOE-OB data results are compared to applicable Maximum Allowable Concentrations (MAC) from the New Mexico Water Quality Control Commission (WQCC) (20.6.2.3103A NMAC Human Health Standards) and Maximum Contaminant Levels (MCLs) from the EPA National Primary Drinking Water Regulations (40 CFR 141).

Samples taken from SWTA3-MW4 were analyzed for Volatile Organic Compounds (VOCs), Diesel Range Organics (DRO), and Gasoline Range Organics (GRO). VOCs were analyzed using EPA method 8260B, and DRO and GRO were analyzed using EPA method 8015B. No organic compounds were detected above their associated Method Detection Limits (MDLs).


Samples were analyzed for high explosive compounds using analytical method SW846 8321A modified by (LC/MS/MS). No HE compounds were detected above their MDLs.

Conclusion

No organic or high explosive compounds were detected above the laboratory (MDLs) from these samples, and the sample results conform to previously-determined trend lines indicating either non-detections, or levels below standards.

The monitoring results will be provided to DOE for review and comment prior to their release as final to other State of New Mexico and federal agencies, the Pueblos, our website and interested members of the public. If you have any questions, or if you would like copies of the complete data set, please contact Chris Armijo at (505)845-5824 or contact me at (505)845-5933.

Sincerely,

  
Barry S. Birch  
Program Manager  
Sandia Oversight Section

BSB:ca

Enclosure: (1) Organic Analytical Results  
(2) Analytical Results for High Explosive Compounds

cc: Karen Agogino, DOE/SSO, MS 0184  
John Gould, DOE/SSO, MS 0184  
Michael Skelly, SNL/NM ER Groundwater, MS 1089  
Thomas Skibitski, Bureau Chief, NMED/DOE-OB

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260B	PINNACLE I.D.	: 612218
CLIENT	: NMED DOE OB	DATE RECEIVED	: 12/21/2006
PROJECT #	: (NONE)	INSTRUMENT ID	: GC/MS1
PROJECT NAME	: GENERAL ER-2-12.21.06	ANALYST	: BP

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
612218-01	SWTA3-MW-4-12.19.06	AQUEOUS	12/19/2006	N/A	12/26/2006	1
PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS			
Dichlorodifluoromethane (75-71-8)	5.0	< 5.0	ug/L			
Chloromethane (74-87-3)	5.0	< 5.0	ug/L			
Vinyl Chloride (75-01-4)	5.0	< 5.0	ug/L			
Bromomethane (74-83-9)	5.0	< 5.0	ug/L			
Chloroethane (75-00-3)	5.0	< 5.0	ug/L			
Trichlorofluoromethane (75-69-4)	5.0	< 5.0	ug/L			
Acetone (67-64-1)	10	< 10	ug/L			
Acrolein (107-02-8)	10	< 10	ug/L			
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L			
Iodomethane (74-88-4)	5.0	< 5.0	ug/L			
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L			
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L			
cis-1,2-Dichloroethene (156-59-2)	1.0	< 1.0	ug/L			
Methyl-t-butyl Ether (1634-04-4)	1.0	< 1.0	ug/L			
1,1,2-Trichlorotrifluoroethane (76-13-1)	5.0	< 5.0	ug/L			
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L			
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L			
2-Butanone (78-93-3)	10	< 10	ug/L			
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L			
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L			
Chloroform (67-66-3)	1.0	< 1.0	ug/L			
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L			
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L			
Vinyl Acetate (108-05-4)	5.0	< 5.0	ug/L			
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L			
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L			
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L			
Benzene (71-43-2)	1.0	< 1.0	ug/L			
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L			
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L			
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L			
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L			
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L			
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L			
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L			
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L			
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L			
Toluene (108-88-3)	1.0	< 1.0	ug/L			
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L			
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L			
2-Hexanone (591-78-6)	10	< 10	ug/L			
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L			
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L			
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L			

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260B	PINNACLE I.D.	: 612218
CLIENT	: NMED DOE OB	DATE RECEIVED	: 12/21/2006
PROJECT #	: (NONE)	INSTRUMENT ID	: GC/MS1
PROJECT NAME	: GENERAL ER-2-12.21.06	ANALYST	: BP

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
612218-01	SWTA3-MW-4-12.19.06	AQUEOUS	12/19/2006	N/A	12/26/2006	1

PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	2.0	< 2.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L
Bromoform (75-25-2)	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	2.0	< 2.0	ug/L
1,2,3-Trichloropropane (96-18-4)	2.0	< 2.0	ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0	ug/L
Bromobenzene (108-86-1)	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	2.0	< 2.0	ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0	ug/L
sec-Butylbenzene (135-98-8)	1.0	< 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0	ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0	ug/L
1,2-Dibromo-3-chloropropane (96-12-8)	5.0	< 5.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	2.0	< 2.0	ug/L
Naphthalene (91-20-3)	3.0	< 3.0	ug/L
Hexachlorobutadiene (87-68-3)	2.0	< 2.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	2.0	< 2.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	96 ( 76 - 114 )
Toluene-d8	102 ( 88 - 110 )
Bromofluorobenzene	107 ( 86 - 115 )



GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015B GRO  
 CLIENT : NMED DOE OB  
 PROJECT # : (NONE)  
 PROJECT NAME : GENERAL ER-2-12.21.06

PINNACLE I.D. : 612218  
 ANALYST : BP

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	SWTA3-MW-4-12.19.06	AQUEOUS	12/19/2006	NA	12/22/2006	1
PARAMETER	DET. LIMIT	UNITS	SWTA3-MW-4-12.19.06			
FUEL HYDROCARBONS	100	UG/L	< 100			
HYDROCARBON RANGE			C6-C10			
HYDROCARBONS QUANTITATED USING			GASOLINE			

CHEMIST NOTES:  
 N/A

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED (DIRECT INJECT)  
 CLIENT : NMED DOE OB  
 PROJECT # : (NONE)  
 PROJECT NAME : GENERAL ER-2-12.21.06

PINNACLE I.D. : 612218  
 ANALYST : DRK

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	SWTA3-MW-4-12.19.06	AQUEOUS	12/19/2006	12/22/2006	12/27/2006	1

PARAMETER	DET. LIMIT	UNITS	SWTA3-MW-4-12.19.06
FUEL HYDROCARBONS, C6-C10	2.0	MG/L	< 2.0
FUEL HYDROCARBONS, C10-C22	1.0	MG/L	< 1.0
FUEL HYDROCARBONS, C22-C36	1.0	MG/L	< 1.0

CALCULATED SUM:

SURROGATE:  
 O-TERPHENYL (%) 101  
 SURROGATE LIMITS (70 - 130)

CHEMIST NOTES:  
 N/A

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Pinnacle Labs, Inc  
 Address : 2709D Pan American Freeway NE  
 Albuquerque, New Mexico 87107

Report Date: January 9, 2007

Contact: Mr. Mitch Rubenstein  
 Project: NMDO

Client Sample ID:	SWTA3-MW4-12.19.06/612218-01	Project:	PINL00304
Sample ID:	178244001	Client ID:	PINL001
Matrix:	Ground Water		
Collect Date:	19-DEC-06 10:15		
Receive Date:	22-DEC-06		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>LC-MS/MS Explosives Federal</b>											
<i>846 8321A Modified Explosives by LC-MS/MS</i>											
1,3,5-Trinitrobenzene	U	ND	0.0779	0.325	ug/L	2	MAP	01/05/07	0621	598597	1
2,4,6-Trinitrotoluene	U	ND	0.0649	0.325	ug/L	2					
2,4-Dinitrotoluene	U	ND	0.0779	0.325	ug/L	2					
2,6-Dinitrotoluene	U	ND	0.0649	0.325	ug/L	2					
2-Amino-4,6-dinitrotoluene	U	ND	0.0649	0.325	ug/L	2					
4-Amino-2,6-dinitrotoluene	U	ND	0.0649	0.325	ug/L	2					
HMX	U	ND	0.0844	0.325	ug/L	2					
Nitrobenzene	U	ND	0.0649	0.325	ug/L	2					
Nitroglycerin	U	ND	0.260	1.30	ug/L	2					
PETN	U	ND	0.519	1.30	ug/L	2					
RDX	U	ND	0.0649	0.325	ug/L	2					
Tetryl	U	ND	0.162	0.649	ug/L	2					
m-Dinitrobenzene	U	ND	0.0649	0.325	ug/L	2					
m-Nitrotoluene	U	ND	0.130	0.325	ug/L	2					
o-Nitrotoluene	U	ND	0.130	0.325	ug/L	2					
p-Nitrotoluene	U	ND	0.169	0.649	ug/L	2					

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8330 PREP	SW846 8330 Explosives Extraction in Liquid	AXH1	12/26/06	1434	598596

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	SW846 8321A Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
3,4-Dinitrotoluene	846 8321A Modified Explosives by LC-MS/MS	3.45	3.25	106	(58%-126%)