Price, Wayne, EMNRD

25561

From: Price, Wayne, EMNRD
Sent: Thursday, July 27, 2006 4:44 PM
To: 'Mike Stubblefield'
Cc: Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: Requested federal reserve pits approved by the B.L.M. for the treatment of Chlorides.

Dear Mr. Stubblefield:
Yates Petroleum

OCD Environmental Bureau is in receipt of the "Re-Establishment of Native Plant Growth over Federal Drilling reserve pits" plan dated 7/14/2006. OCD understands these are historical older pits and the depth to groundwater exceeds 100 feet. OCD hereby approves of the plan with the following conditions:

1. Must have written permission from the OCD District II Supervisor.
2. This approval is only for the 10 sites listed below.
3. Sites located in sensitive areas such as near populated areas (within one mile), or within 1000 feet from a watercourse or water supply well shall not be allowed.
4. This site has been assigned OCD Case # 2R0057 and all correspondence shall have this ID number attached thereto.

Please be advised that NMOCD approval of this plan does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

From: Mike Stubblefield [mailto:mikes@YPCNM.COM]
Sent: Thursday, July 27, 2006 10:47 AM
To: Price, Wayne, EMNRD
Subject: Requested federal reserve pits approved by the B.L.M. for the treatment of Chlorides.

Wayne,

As per our conversation on 7/27/2006 I'm providing you a list of the following Federal reserve pit sites that will be treated with a chemical emulsion product to lower chlorides.

1 Federal BZ Com. #12-YA Ut.K 21-17s-25e E
2 Hill view AHE #6 Ut.B 23-20s-24e E
3 Hill view AHE #8 Ut.P 14-20s-24e E
4 Hill view AHE #17 Ut.O 23-20s-24e E
5 Ottawa AOW Federal #1 Ut.K 3-19s-25e E
6 Ottawa AOW Federal #2 Ut.M 3-19s-25e E
7 N. Turkey Tr. MU Federal #1 Ut.C 33-18s-29e E
8 Roden GD Federal #4 Ut.G 35-19s-24e E
9 Senita AIP Federal #1 Ut.K 14-20s-24e E
10 Senita AIP Federal #2 Ut.N 14-20s-24e E

If I can be of further assistance please call me at 505-748-4500.

Sincerely,

Mike Stubblefield

748-1283
108

7/27/2006

RESTORATION PROCEDURES
for
RE-ESTABLISHMENT OF NATIVE PLANT GROWTH

Where the current condition of the reclaimed reserve pit area is not conducive for the re-establishment of native plant growth, Yates Petroleum Corporation intends to treat chlorides visible at the surface to lower those chlorides to a level that will support new growth of native vegetation over the reserve pit area by utilizing the following procedures:

1. A five spot composite soil sample will be taken at the surface of the reserve pit. The chloride levels will be determined and documented by using EPA method 9253.
2. Salts that are visible on the surface will be excavated and removed to a depth of six inches. The removed material will be disposed at an Oil Conservation Division approved landfill.
3. The pit area will be treated using an emulsion of Frontier Labs Calcium, Monty's Liquid Carbon, or like product and fresh water. Thirty days following the first treatment of the reserve pit site, a second treatment will be applied.
4. Topsoil will be brought in, re-distributed, contoured, and re-seeded to meet or exceed BLM criteria.
5. Sampling and documentation of chloride levels as well as visually monitoring new growth of native vegetation will be conducted on a quarterly basis from the first treatment date. Additional treatments on the reserve pit site will be applied as needed contingent upon sampling results of chloride levels and the visual monitorings.
6. Twenty four months after the first treatment date the following results and actions will be observed and incorporated:
   A. The native vegetation will be re-established to a level that is acceptable and approved by the BLM. All monitoring and treatment of the reserve pit site will be concluded and the plug and abandon location will be released from all closure requirements.

   or

   B. Native vegetation has **not** been re-established to acceptable BLM standards. The reserve pit contents will then be encapsulated or opened and closed under the closure requirements of the New Mexico Oil Conservation Division's Pit Rule 50.

1/19/06 per Mike S.:
Approx 4" material has been removed from surface (caliche) on the Hill View AHE #17 & the N. Turkey TR MU #1
He will submit a proposal letter to us.

YATES PETROLEUM CORPORATION

105 SOUTH FOURTH STREET
RTESIA, NEW MEXICO 88210-2118
TELEPHONE (505) 748-1471

Mr. Mike Bratcher
Oil Conservation Division
1301 West Grand
Artesia, NM 88210

RE: Treatment of chlorides on plug and abandon drilling reserve pit locations and the re-establishment of native vegetation

Dear Mr. Bratcher:

Yates Petroleum Corporation petitioned the Bureau of Land Management and was granted with conditions to apply chemical emulsion product to treat chlorides for the re-vegetation processes on the following plug and abandon sites:

API NUMBER	WELL NAME	SEC	TWN	RNG
30 015 21625	Federal BZ Com 12-YA	21	17S	25E
30 015 26601	Hill View AHE 6	23	20S	24E
30 015 26602	Hill View AHE 8	14	20S	24E
30 015 27214	Hill View AHE 17	23	20S	24E
30 015 23136	N Turkey Track MU Fed Com 1	33	18S	29E
30 015 20438	Ottawa AOW Federal 1	3	19S	25E
30 015 28753	Ottawa AOW Federal 2	3	19S	25E
30 015 26132	Roden GD Federal 4	35	19S	24E
30 015 26599	Senita AIP Fed 1	14	20S	24E
30 015 27013	Senita AIP Fed 2	14	20S	24E

Yates Petroleum Corporation respectfully requests your approval for the remediation procedure. Please find attached a detailed re-vegetation procedure for your approval.

Respectfully,

Mike Stubblefield
Environmental Regulatory Agent

5. Topsoil redistributed over the reserve pits is to be weed free with no noxious weed species (i.e., salt cedar, african rue, malta starthistle). Prior to application, verify with BLM the location of topsoil used to cover the reserve pits. If topsoil is to be obtained from a federal minerals pit, a sales permit is required. Contact Bob Rogers, BLM Geologist, at (505) 234-5938 for further information.
6. Any surface disturbance that occurred during the remediation operations on the abandoned, reclaimed well pads will need to be mitigated. Reclamation practices like disking, contouring, reseeding and barricading may be necessary.
7. After the reserve pit has met all closure requirements and is capable of supporting vegetation, the access roads into the abandoned well locations will be reclaimed. Please contact BLM prior to road reclamation to verify reclamation requirements.
8. Contact BLM to verify appropriate seed mixture to be used for the reserve pit and access roads for each site. In order for the BLM to witness the seeding operations, contact BLM three days prior to such operations.
9. After the reserve pits are seeded, a three strand fence will be installed around the reserve pits to temporarily prevent livestock from grazing on emerging plants. The fence will be removed once BLM verifies that desirable vegetation has been established evenly across the location. On the abandoned, reclaimed well sites, the entire drill pad may be temporarily fenced as well to prevent livestock grazing.
9. A final closure report will need to be submitted to the BLM for approval and final release. Like approval must also be granted by NM OCD.

The objective of reclamation on federal lands is to restore the disturbed sites to the original contour, control erosion and establish desirable (seeded and native) vegetation similar to surrounding vegetative communities. BLM will continue to monitor the location until native, desirable vegetation similar to the surrounding vegetative communities has established evenly across the location. If chemical emulsion products do not reduce chloride levels and/or vegetative growth is not established, additional work to remediate contaminated soils and/or revegetate the reserve pits will be required. There will be no additional approvals for reserve pit remediation with chemical emulsion products on Yates Petroleum Corporation locations until the applications can be proven to reduce chloride levels and the sites are capable of supporting vegetation.

Please contact Becky Hunt, Environmental Protection Specialist, at (505) 234-5995, if you have any questions or concerns.

Sincerely,

James A. Amos

James Amos
Supervisory Petroleum Engineering Technician

Cc: Mike Bratcher, NM OCD – Artesia

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 E. Greene St.
Carlsbad, NM 88220-6292

TAKE PRIDE IN AMERICA

January 10, 2006

In reply, refer to:
3162.4 (NM-0522)

NMLC064488E	NMNM26864
NMNM02056	NMNM42787A
NMNM045274	NMNM86241
NMNM0219603	

Mike Stubblefield
105 S. 4th St.
Artesia, NM 88210-2118

Dear Mr. Stubblefield,

Your request to apply a chemical emulsion product to treat chlorides on reserve pits associated with the following federal wells

Senita AIP Fed #1, 1925 FSl & 1980 FWL, Sec. 14, T20S, R24E
Senita AIP Fed #2, 660 FSL & 1980 FWL, Sec. 14, T20S, R24E
Hill View AHE #8, 660 FSL & 660 FEL, Sec. 14, T20S, R24E
Hill View AHE #6, 660 FNL & 1980 FEL, Sec. 23, T20S, R24E
Hill View AHE #17, 710 FSL & 1980 FEL, Sec. 23, T20S, R24E
Federal BZ Com 12-YA, 1980 FSL & 1980 FWL, Sec. 21, T17S, R25E
Roden GD Fed #4, 1650 FNL & 1650 FEL, Sec. 35, T19S, R24E
Ottawa AOW Fed #1, 1980 FSL & 1699 FWL, Sec. 3, T19S, R25E
Ottawa AOW Fed #2, 660 FSL & 660 FWL, Sec. 3, T19S, R25E
N Turkey TR MU #1, 660 FNL & 1980 FWL, Sec. 33, T18S, R29E

is hereby approved per the following conditions of approval:

1. All operations must be conducted in accordance with New Mexico Oil Conservation Division (NM OCD) like approval. Contact NM OCD Artesia office for like approval.
2. In order for Bureau of Land Management (BLM) to witness soil sampling and product application operations at subject sites, contact BLM three days prior to such activities.
3. Quarterly reports discussing soil sampling and product application activities as well as analytical results from all sampling events need to be submitted to BLM. The reports also need to include future activities that will occur within the next quarter.
4. All soil samples must be fully delineated to verify further leaching of chlorides into the topsoil will not occur. This must be determined prior to the redistribution of topsoil over the reserve pits.

2. Distance to surface water for each pit

WELL NAME	Distance to Surface Water (see attachment)
Federal BZ Com 12-YA	> 1000'
Hill View AHE 6	> 1000'
Hill View AHE 8	> 1000'
Hill View AHE 17	> 1000'
N Turkey Track MU Fed Com 1	> 200' <1000'
Ottawa AOW Federal 1	> 1000'
Ottawa AOW Federal 2	> 1000'
Roden GD Federal 4	> 1000'
Senita AIP Fed 1	> 1000'
Senita AIP Fed 2	> 1000'

3. Are any of the pits in a wellhead protection area

WELL NAME	Wellhead Protection
Federal BZ Com 12-YA	> 1000'
Hill View AHE 6	> 1000'
Hill View AHE 8	> 1000'
Hill View AHE 17	> 1000'
N Turkey Track MU Fed Com 1	> 1000'
Ottawa AOW Federal 1	> 1000'
Ottawa AOW Federal 2	> 1000'
Roden GD Federal 4	> 1000'
Senita AIP Fed 1	> 1000'
Senita AIP Fed 2	> 1000'

4. Please provide information on how each of the pits were initially closed

The above named and closed drilling pit sites were closed before Pit Rule 50 became effective April 15, 2004. The drilling pits were cut and mixed, and when sufficiently dried, was land spread over the old drilling reserve pit area. The spread drilling pit material was not placed on liners.

5. Is there a liner underneath any of the pits to prevent infiltration

At the time of pit construction, a liner was placed prior to drilling activity.

6. What are the remaining chlorides in the pits, below and above

Results (utilizing EPA Method 300) of the initial samples from a third party lab will be submitted as those results are received. Please find attached the chloride results of the HILLVIEW AHE 17, HILLVIEW AHE 6, HILLVIEW AHE 8, SENITA AIP FED 2, SENITA AIP FED 1, and RODEN GD FED 4.

Sampling of the remaining sites FEDERAL BZ COM 12-YA, N TURKEY TRACK MU FED COM 1, OTTAWA AOW FEDERAL 1, and OTTAWA FEDERAL AOW FEDERAL 2 are in progress. Analysis has not been

YATES PETROLEUM CORPORATION

105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118
TELEPHONE (505) 748-1471

March 3, 2006

Mr. Van Barton
New Mexico Oil Conservation Division
1301 West Grand Avenue
Artesia, NM 88210

RE: Treatment for chlorides on the following plug and abandon and producing drilling reserve pit locations

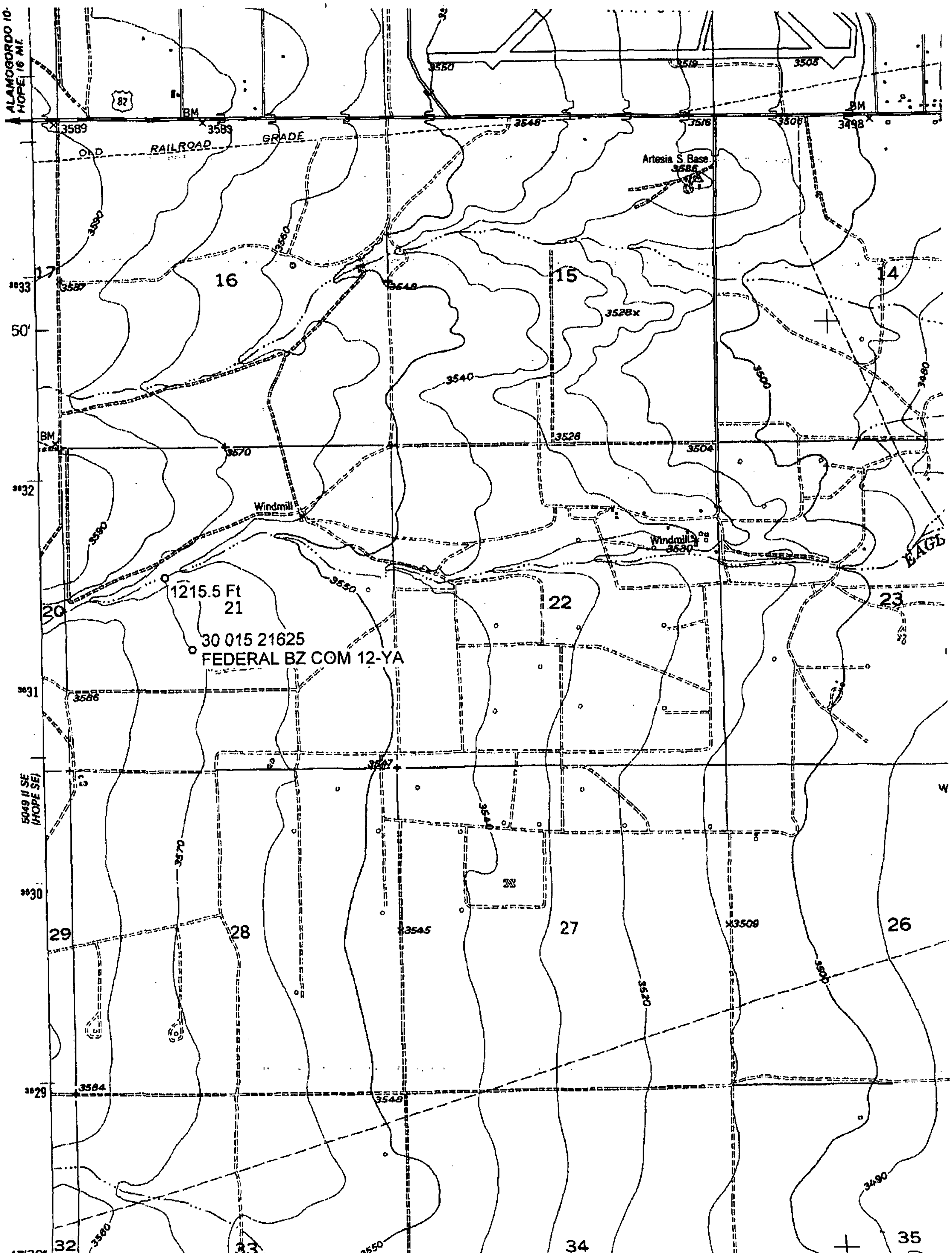
API NUMBER	WELL NAME	SEC	TWN	RNG
30 015 21625	Federal BZ Com 12-YA	21	17S	25E
30 015 26601	Hill View AHE 6	23	20S	24E
30 015 26602	Hill View AHE 8	14	20S	24E
30 015 27214	Hill View AHE 17	23	20S	24E
30 015 23136	N Turkey Track MU Fed Com 1	33	18S	29E
30 015 20438	Ottawa AOW Federal 1	3	19S	25E
30 015 28753	Ottawa AOW Federal 2	3	19S	25E
30 015 26132	Roden GD Federal 4	35	19S	24E
30 015 26599	Senita AIP Fed 1	14	20S	24E
30 015 27013	Senita AIP Fed 2	14	20S	24E

Dear Mr. Barton:

Yates Petroleum Corporation is in receipt of your letter dated February 16, 2006 requesting additional information. Please find the requested information and Yates' response to the request addressed below.

1. Depth to groundwater for each pit

WELL NAME	Depth to Ground Water
Federal BZ Com 12-YA	> 100'
Hill View AHE 6	> 100'
Hill View AHE 8	> 50' <100'
Hill View AHE 17	> 100'
N Turkey Track MU Fed Com 1	> 100'
Ottawa AOW Federal 1	> 100'
Ottawa AOW Federal 2	> 100'
Roden GD Federal 4	> 100'
Senita AIP Fed 1	>50' <100'
Senita AIP Fed 2	>50' <100'



Artesia; NM Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2.640", 1 cm = 240Mt

received, however, is anticipated by April 1, 2006. Upon receipt of the results, the chloride analysis will be submitted to OCD.

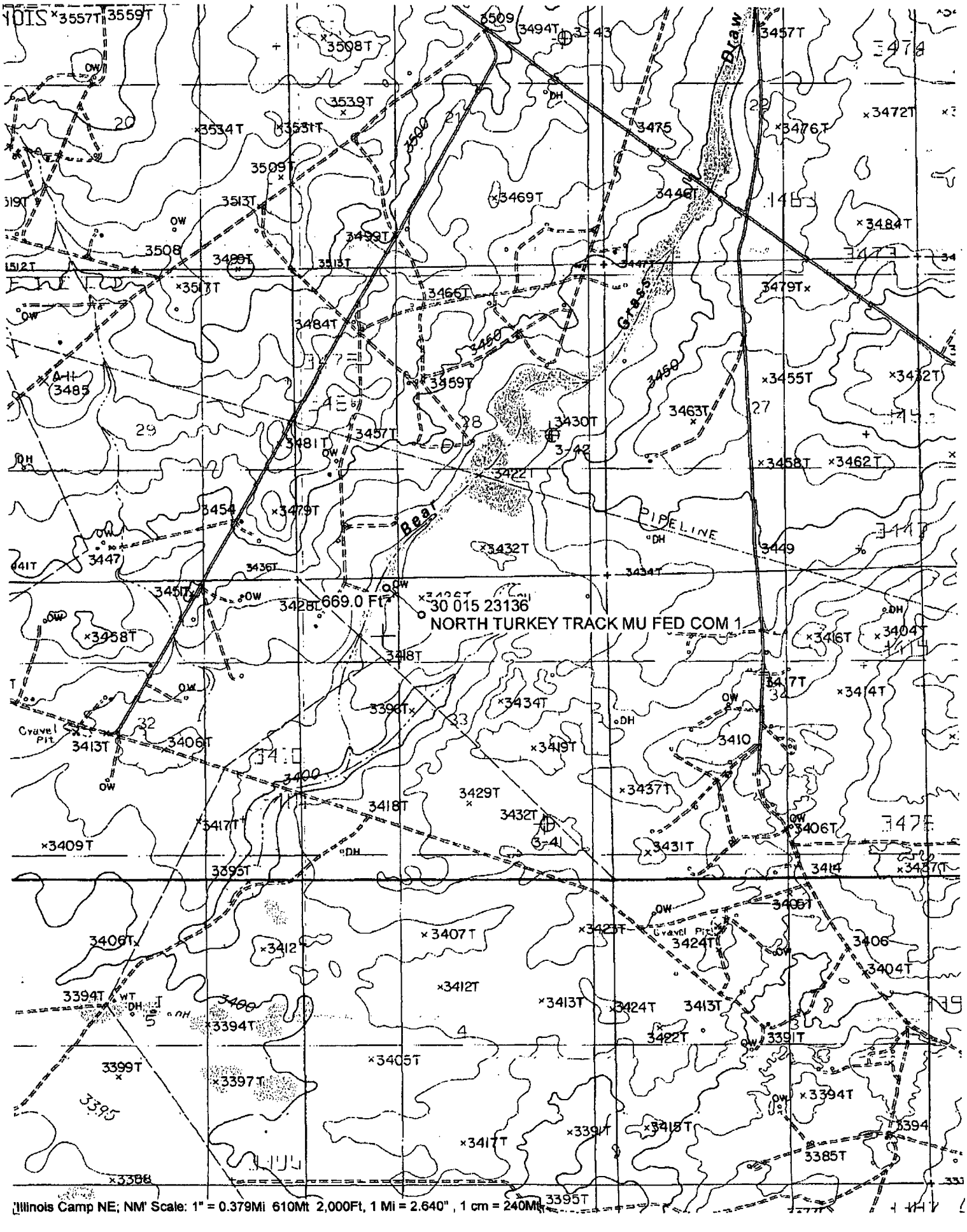
7. Will remaining chlorides that are not remediated be monitored for leaching other than into the topsoil

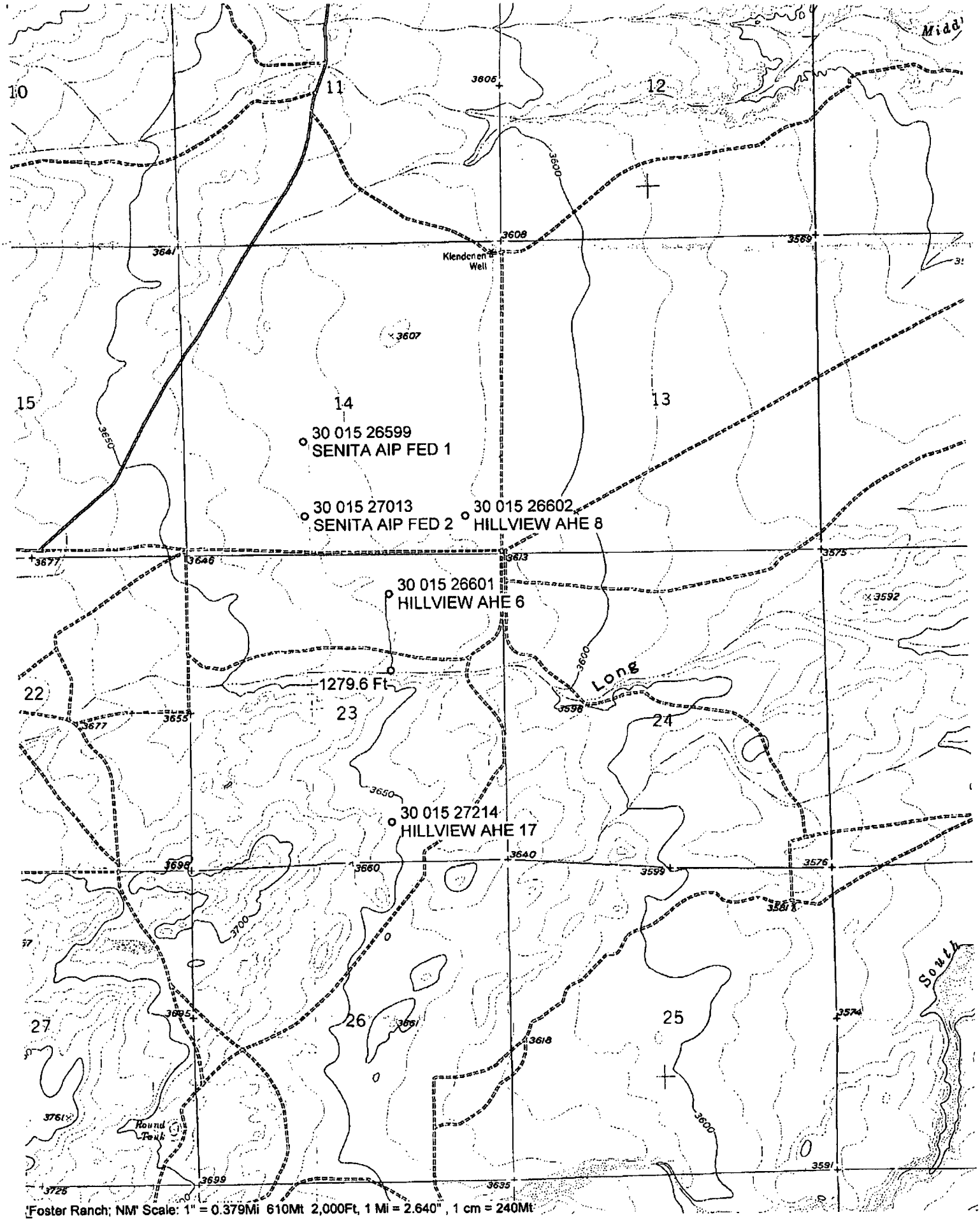
Final samples will be taken quarterly from the surface and in one-foot increments to a depth of four feet during the twenty-four month period. Please contact me at 505.748.4500 should you have any questions.

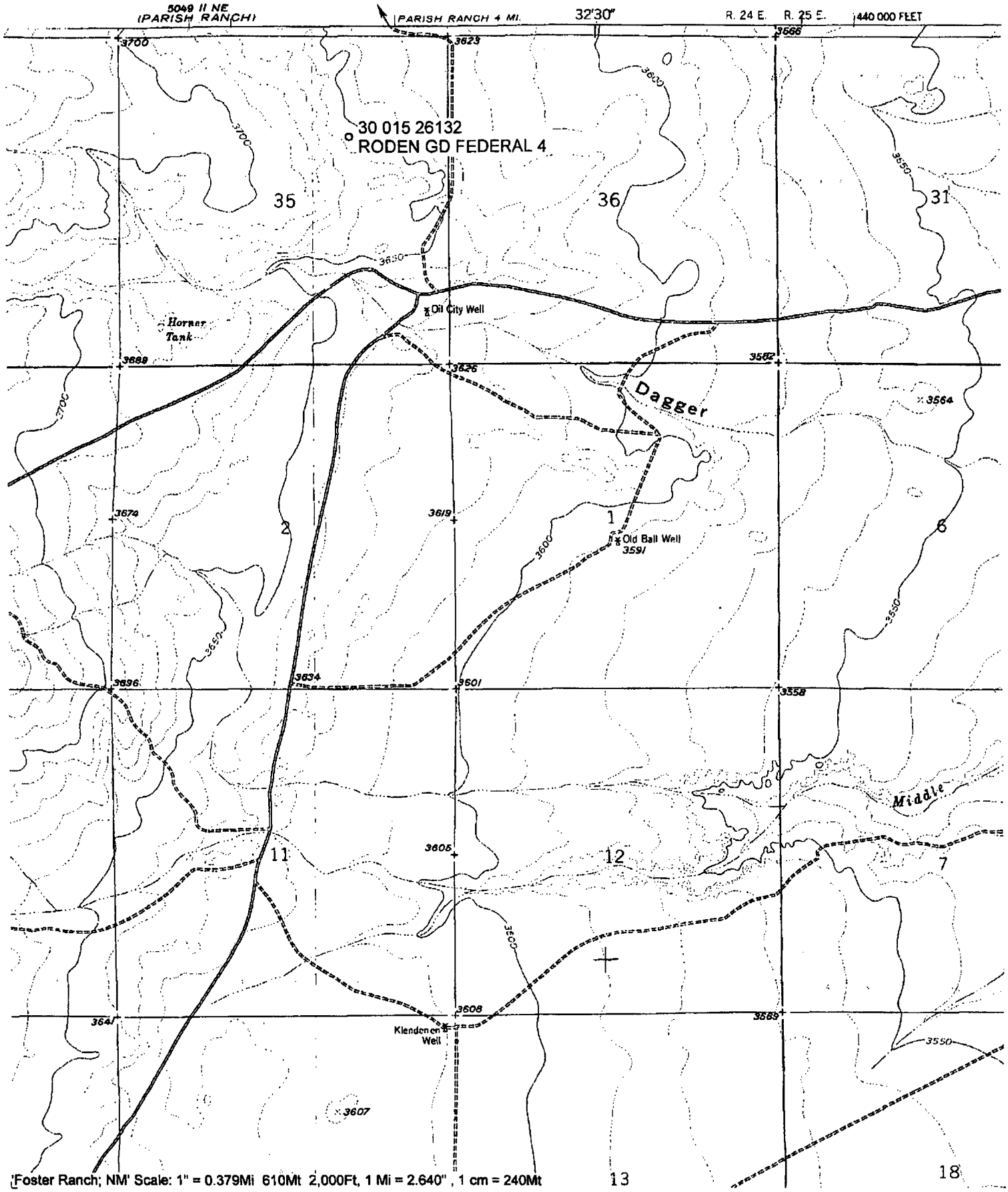
Respectfully,

Mike Stubblefield

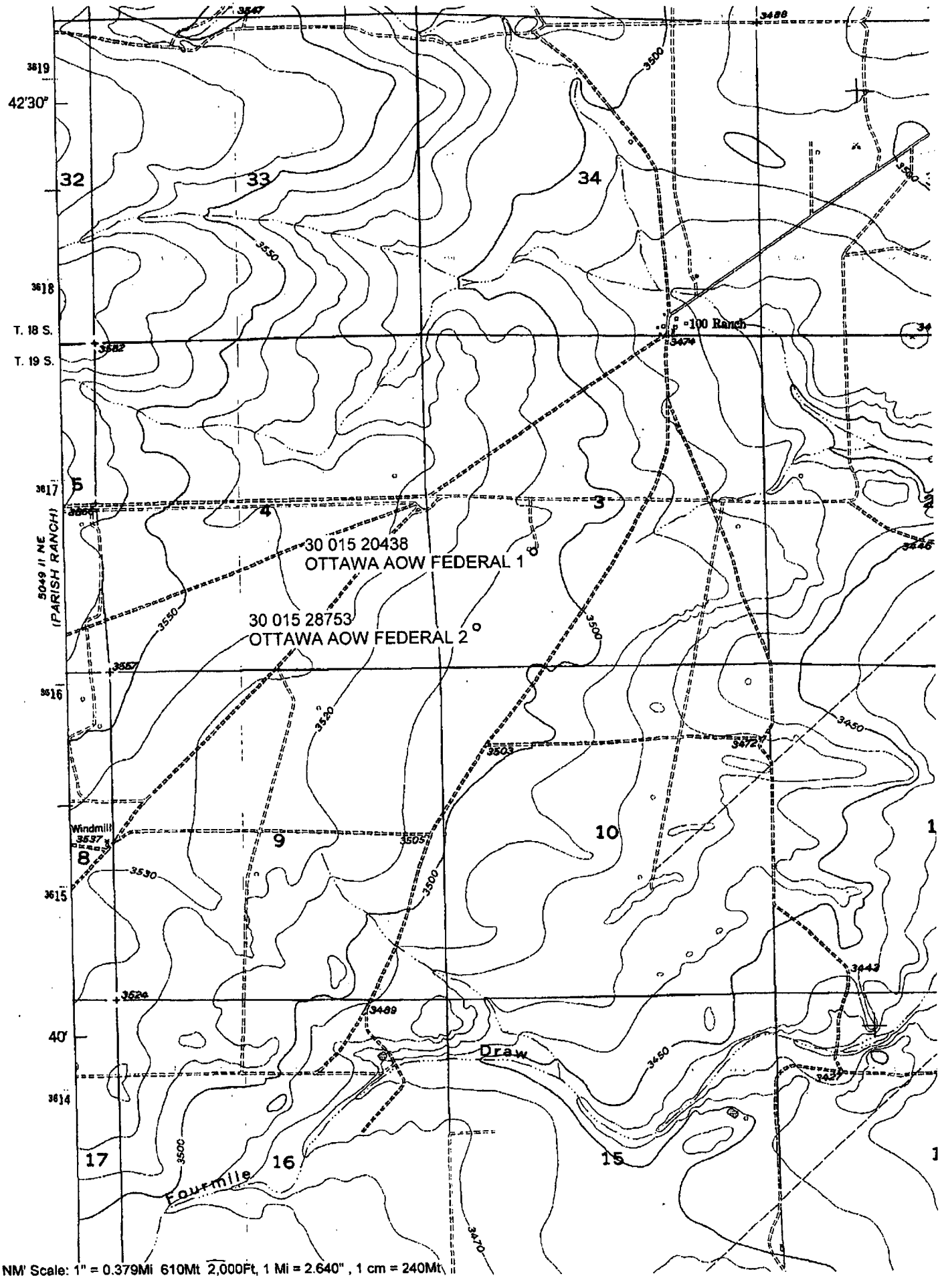
enclosures


669.0 Ft
30 015 23136
NORTH TURKEY TRACK MU FED COM 1
Draw
Grass
Bear
PIPELINE
Gravel Pit
Illinois Camp NE; NM' Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2.640" , 1 cm = 240Mt


30 015 26599
SENITA AIP FED 1
30 015 27013
SENITA AIP FED 2
30 015 26602
HILLVIEW AHE 8
30 015 26601
HILLVIEW AHE 6
1279.6 Ft
30 015 27214
HILLVIEW AHE 17
Klendenen Well
Round Tank
Long
South
10
11
12
13
14
15
22
23
24
25
26
27
'Foster Ranch; NM' Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2.640" , 1 cm = 240Mt



'Foster Ranch; NM' Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2.640" , 1 cm = 240Mt



Dayton; NM' Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2.640" , 1 cm = 240Mt

YATES PETROLEUM CORPORATION

105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118
TELEPHONE (505) 748-1471

7/14/2006

2R0057

Oil Conservation Division
Att: Wayne Price
1220 South St. Francc Drivc
Santa Fe, New Mexico 87505

Re: Re-Establishment of Native Plant Growth over closed Federal Drilling reserve pits.

Dear Mr. Wayne Price,

Yates Petroleum Corporation is requesting the opportunity to apply a chemical emulsion product to treat chlorides on reclaimed Federal Reserve pits. Where the current conditions of the reclaimed reserve pit area is not conducive for the re-establishment of native plant growth.

To prevent the possible impact of fresh water, a review of the New Mexico Office of the Engineer Waters Data base will be conducted prior to applying the Calcium Dormant Mix and treatment procedure. No reserve pits with ground waters less than 100 ft in depth will be treated using the above listed chemicals and treatment procedure. Due to the low volume of the treatment fluid & the spray method of application there will be no ponding of the treatment fluid over the treated reserve pit sites. Quarterly reports discussing soil sampling and product application activities as well as analytical results from all soil sampling events will be submitted to the B.L.M. & the O.C.D, as per attached requirements for permit approval by the B.L.M.
The quarterly reports will also need to include future activities that will occur within the next quarter. In order for the Bureau of Land Management (B.L.M.) to witness soil sampling and product applications operations at the subject sites, a three day notification is required by the B.L.M. prior to soil samples taken for analytical or applying the treatment procedure to the reserve pit sites.

Included is information on the products to be used for the treatment of chlorides, the MSDS for the Frontier Labs, Inc. Genesis Soil Rite- Dormant Mix, analytical results from soil samples taken prior to starting treatment procedure for reserve pit sites targeted for the treatment of chloride.

If I can be of further assistance in this matter please do not hesitate to contact me. My Phone number is 505-513-1712 or E-mail me at mikes@ypcnm.com.

Sincerely,

Mike Stubblefield
Environmental Regulatory Agent

ASSAIGAI
ANALYTICAL
LABORATORIES, INC.
4301 Masthead NE, Ste. A • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

Explanation of codes	
B	*Analyte Detected in Method Blank*
E	*Result is Estimated*
H	*Analyzed Out of Hold Time*
N	*Tentatively Identified Compound*
S	*Subcontracted*
1-9	*See Footnote*

YATES PETROLEUM CORP.
attn: **MIKE STUBBLEFIELD**
105 S. 4TH STREET
ARTESIA **NM 88210**

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **HILLVIEW AHE#17, #6 AND #8**
Order: **0602145** **YAT01** Receipt: **02-08-06**

William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Sample: ***1.HILLVIEW AHE#17/SURFACE PIT*** Collected: *02-02-06 9:30:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0001A		**SW846 9056 Anions by Ion Chromatography**						By: JTK		
W06099	WC.2006.350.4	16887-00-6	Chloride	5520	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***2.HILLVIEW AHE#17/1' DEPTH PIT*** Collected: *02-02-06 9:45:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0002A		**SW846 9056 Anions by Ion Chromatography**						By: JTK		
W06099	WC.2006.350.5	16887-00-6	Chloride	7290	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***3.HILLVIEW AHE#6/SURFACE PIT*** Collected: *02-02-06 11:00:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0003A		**SW846 9056 Anions by Ion Chromatography**						By: JTK		
W06099	WC.2006.350.28	16887-00-6	Chloride	33200	mg / Kg	5000	0.5		02-09-06	02-10-06

Report Date: *2/16/2006 9:27:38 AM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **HILLVIEW AHE#17, #6 AND #8**
Order: **0602145 YAT01** Receipt: **02-08-06**

Sample: ***4.HILLVIEW AHE#6/NE CORNER*** Collected: *02-02-06 11:10:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0004A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.7	16887-00-6	Chloride	7150	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***5.HILLVIEW AHE#6/NW CORNER*** Collected: *02-02-06 11:15:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0005A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.29	16887-00-6	Chloride	7470	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***6.HILLVIEW AHE#6/SW CORNER*** Collected: *02-02-06 11:20:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0006A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.9	16887-00-6	Chloride	6690	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***7.HILLVIEW AHE#6/SE CORNER*** Collected: *02-02-06 11:25:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0007A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.11	16887-00-6	Chloride	2390	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***8.HILLVIEW AHE#6/MIDDLE PIT*** Collected: *02-02-06 11:35:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0008A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.12	16887-00-6	Chloride	6620	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***9.HILLVIEW AHE#8/SURFACE COMP*** Collected: *02-02-06 12:00:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0009A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.30	16887-00-6	Chloride	22300	mg / Kg	5000	0.5		02-09-06	02-10-06

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **HILLVIEW AHE#17, #6 AND #8**
Order: **0602145 YAT01** Receipt: **02-08-06**

Sample: ***9.HILLVIEW AHE#8/SURFACE COMP*** Collected: *02-02-06 12:00:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date

Sample: ***10.HILLVIEW AHE#8/MIDDLE PIT*** Collected: *02-02-06 12:05:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0010A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.14	16887-00-6	Chloride	8590	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***11.HILLVIEW AHE#8/SW CORNER*** Collected: *02-02-06 12:15:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0011A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.15	16887-00-6	Chloride	6800	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***12.HILLVIEW AHE#8/SE CORNER*** Collected: *02-02-06 12:20:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0012A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.31	16887-00-6	Chloride	10500	mg / Kg	500	0.5		02-09-06	02-10-06

Sample: ***13.HILLVIEW AHE#8/NE CORNER*** Collected: *02-02-06 12:30:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0013A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.32	16887-00-6	Chloride	14600	mg / Kg	500	0.5		02-09-06	02-10-06

Sample: ***14.HILLVIEW AHE#8/NW CORNER*** Collected: *02-02-06 12:45:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0014A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.18	16887-00-6	Chloride	5280	mg / Kg	50	0.5		02-09-06	02-09-06

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **HILLVIEW AHE#17, #6 AND #8**
Order: **0602145 YAT01** Receipt: **02-08-06**

Sample: ***15.SENITA AIP FED #2/SURFACE*** Collected: *02-02-06 14:15:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0015A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.33	16887-00-6	Chloride	35200	mg / Kg	500	0.5		02-09-06	02-10-06

Sample: ***16.SENITA AIP FED #2/MIDDLE*** Collected: *02-02-06 14:20:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0016A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.20	16887-00-6	Chloride	8530	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***17.SENITA AIP FED #2/SE CORNER*** Collected: *02-02-06 14:25:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0017A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.22	16887-00-6	Chloride	6720	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***18.SENITA AIP FED #2/SW CORNER*** Collected: *02-02-06 14:30:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0018A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.23	16887-00-6	Chloride	8380	mg / Kg	50	0.5		02-09-06	02-09-06

Sample: ***19.SENITA AIP FED #2/NE CORNER*** Collected: *02-02-06 14:40:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0019A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06099	WC.2006.350.34	16887-00-6	Chloride	12700	mg / Kg	500	0.5		02-09-06	02-10-06

Sample: ***20.SENITA AIP FED #2/NW CORNER*** Collected: *02-02-06 14:50:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0020A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.22	16887-00-6	Chloride	11000	mg / Kg	100	0.5		02-09-06	02-13-06

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **HILLVIEW AHE#17, #6 AND #8**

Order: **0602145** **YAT01** Receipt: **02-08-06**

Sample: ***20.SENITA AIP FED #2/NW CORNER*** Collected: *02-02-06 14:50:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date

Sample: ***21.SENITA AIP FED #1/SURFACE*** Collected: *02-02-06 15:00:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0021A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.23	16887-00-6	Chloride	27300	mg / Kg	2500	0.5		02-09-06	02-13-06

Sample: ***22.SENITA AIP FED #1/SE CORNER*** Collected: *02-02-06 15:15:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0022A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.8	16887-00-6	Chloride	9380	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***23.SENITA AIP FED #1/MIDDLE*** Collected: *02-02-06 15:00:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0023A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.9	16887-00-6	Chloride	6760	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***24.SENITA AIP FED #1/SW CORNER*** Collected: *02-02-06 15:20:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0024A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.10	16887-00-6	Chloride	6860	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***25.SENITA AIP FED #1/NW CORNER*** Collected: *02-02-06 15:30:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0025A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.11	16887-00-6	Chloride	5510	mg / Kg	50	0.5		02-09-06	02-10-06

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **HILLVIEW AHE#17, #6 AND #8**
Order: **0602145 YAT01** Receipt: **02-08-06**

Sample: ***26.SENITA AIP FED #1/NE CORNER*** Collected: *02-02-06 15:40:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0026A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.13	16887-00-6	Chloride	9480	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***27. RODEN GD FED #4/SURFACE*** Collected: *02-02-06 16:00:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0027A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.24	16887-00-6	Chloride	27200	mg / Kg	2500	0.5		02-09-06	02-13-06

Sample: ***28. RODEN GD FED #4/NW CORNER*** Collected: *02-02-06 16:05:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0028A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.15	16887-00-6	Chloride	8280	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***29. RODEN GD FED #4/MIDDLE*** Collected: *02-02-06 16:10:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0029A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.16	16887-00-6	Chloride	6300	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***30. RODEN GD FED #4/NE CORNER*** Collected: *02-02-06 16:15:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0030A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.17	16887-00-6	Chloride	8180	mg / Kg	50	0.5		02-09-06	02-10-06

Sample: ***31. RODEN GD FED #4/SE CORNER*** Collected: *02-02-06 16:20:00* By: *MS*
Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0031A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06101	WC.2006.360.18	16887-00-6	Chloride	4760	mg / Kg	50	0.5		02-09-06	02-10-06

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **HILLVIEW AHE#17, #6 AND #8**

Order: **0602145** **YAT01** Receipt: **02-08-06**

Sample: ***31. RODEN GD FED #4/SE CORNER*** Collected: *02-02-06 16:20:00* By: *MS*

Matrix: ***COMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date

Sample: ***32. RODEN GD FED #4*** Collected: *02-02-06 0:00:00* By: *MS*

Matrix:

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0602145-0032A		**SW846 9056 Anions by Ion Chromatography**						By: JTK		
W06101	WC.2006.360.19	16887-00-6	Chloride	5080	mg / Kg	50	0.5		02-09-06	02-10-06

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

MEMO: Samples were received at 11.5 degrees Celsius.

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab job No.: 0002145 Date ______

Page 1 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: Yates Petroleum Corporation

Address: 105 South 4th Street

City / State / Zip: Artesia, N.M. 88210

Project Name / Number: Hillview AHE #17, Hillview AHE #6, Hillview AHE #3

Contract / Purchase Order / Quote: [illegible]

Project Manager / Contact: Mike Stubblefield

Telephone No.: 505-748-4500

Fax No.: 505-748-4635

Samplers: (signature) [signature]

AALI Fraction Number (OFFICE USE ONLY)	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation: Temp.	Preservation: Chemical	No. of Containers	Analysis Required: Chlorides									Remarks
[illegible]	1 Hillview AHE #17	[illegible]	[illegible]	[illegible]	Composite soil [illegible]				✓									
[illegible]	2 Hillview AHE #17	[illegible]	[illegible]	[illegible]	Composite [illegible]				✓									
[illegible]	3 Hillview AHE #6	[illegible]	[illegible]	[illegible]	Composite [illegible]				✓									
[illegible]	4 Hillview AHE #6	[illegible]	[illegible]	[illegible]					✓									
[illegible]	5 Hillview AHE #6	[illegible]	[illegible]	[illegible]	[illegible]				✓									
[illegible]	6 Hillview AHE #6	[illegible]	[illegible]	[illegible]	[illegible]				✓									
[illegible]	7 Hillview AHE #6	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]									
[illegible]	8 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]									
[illegible]	9 Hillview AHE #3	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]									
[illegible]	10 Hillview AHE #3	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]									
[illegible]	11 Hillview AHE #3	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]									
[illegible]	12 Hillview AHE #3	[illegible]	[illegible]	[illegible]	[illegible]				✓									

Relinquished by:
Signature: [signature]
Printed: Mike Stubblefield
Company: Yates Petroleum Corp.
Reason: Chlorides [illegible]
Date: [illegible]
Time: 1:45 pm

Received by:
Signature ______
Printed ______
Company ______
Reason ______

Relinquished by:
Signature ______
Printed ______
Company ______
Reason ______

Date: [illegible]
Time: [illegible]

Received by:
Signature: [signature]
Printed: [illegible]
Company: [illegible]
Reason: [illegible]

Method of Shipment: [illegible]
Shipment No. ______
Special Instructions: ______

Comments: [illegible] [illegible]

After analysis, samples are to be:
- ❑ Disposed of (additional fee)
- ❑ Stored (30 days max)
- ❑ Stored over 30 days (additional fee)
- ❑ Returned to customer

CARRIER

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab job No.: 0102145 Date ______

Page 2 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: Yates Petroleum Corporation
Address: 105 South 4th Street
City / State / Zip: Artesia, N.M. 88210
Project Name / Number: Hillview AHE #3, Sonita AIP Fed #1
Contract / Purchase Order / Quote: 103 2477

Project Manager / Contact: Mike Stubblefield
Telephone No.: 505-748-4500
Fax No.: 505-748-4635
Samplers: (signature): [signature]

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	Chlorides									Remarks
[illegible]	10. Hillview AHE #3	[illegible]	[illegible]	[illegible]	NE corner pit				✓									
[illegible]	10. Hillview AHE #3	[illegible]	[illegible]	[illegible]	NW corner pit				✓									
[illegible]	15. Sonita AIP Fed #1	[illegible]	[illegible]	[illegible]	Surface pit				✓									
[illegible]	15. Sonita AIP Fed #2	[illegible]	[illegible]	[illegible]	Middle pit				✓									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SE corner pit				✓									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SW corner pit				✓									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NE corner pit				[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NW corner pit				[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SE corner pit				[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	middle pit				[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SW corner pit				[illegible]									

OFFICE USE ONLY

Relinquished by:
Signature: [signature]
Printed: [illegible]
Company: [illegible]
Reason: [illegible]
Date: [illegible]
Time: [illegible]

Received by:
Signature ______
Printed ______
Company ______
Reason ______

Relinquished by:
Signature ______
Printed ______
Company ______
Reason ______

Date: [illegible]
Time: [illegible]

Received by:
Signature: [signature]
Printed: [illegible]
Company: [illegible]
Reason: [illegible]

Method of Shipment: [illegible]
Shipment No. ______
Special Instructions: ______

Comments: ______

After analysis, samples are to be:
- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

CARRIER

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: [illegible] Date ______

Page 3 of 3

Client: Yates Petroleum Corporation
Address: 105 South 4th Street
City / State / Zip: Artesia, N.M. 88210
Project Name / Number: Santa AIP Fed #1, [illegible]
Contract / Purchase Order / Quote: 1032422

Project Manager / Contact: Mike Stubblefield
Telephone No.: 505 748-4500
Fax No.: 505 748-4635
Samplers: (signature) [illegible]

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	Chloride	Remarks
OFFICE USE ONLY	25 Santa AIP Cell #1	[illegible]	[illegible]	[illegible]	[illegible]			1		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					
	[illegible]	[illegible]						1		

Relinquished by:
Signature: [illegible]
Printed: Mike Stubblefield
Company: Yates Petroleum Corp.
Reason: [illegible]
Date: [illegible]
Time: 12:45 pm

Received by:
Signature ______
Printed ______
Company ______
Reason ______

Relinquished by:
Signature ______
Printed ______
Company ______
Reason ______

Date: [illegible]
Time: [illegible]

Received by:
Signature: [illegible]
Printed: [illegible]
Company: [illegible]
Reason: [illegible]

Method of Shipment: Bus
Shipment No. ______
Special Instructions: ______

Comments: ______

After analysis, samples are to be:
- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

CARRIER

ASSAIGAI
ANALYTICAL
LABORATORIES, INC.
4301 Masthead NE, Ste. A • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

Explanation of codes	
B	*Analyte Detected in Method Blank*
E	*Result is Estimated*
H	*Analyzed Out of Hold Time*
N	*Tentatively Identified Compound*
S	*Subcontracted*
1-9	*See Footnote*

YATES PETROLEUM CORP.
attn: **MIKE STUBBLEFIELD**
105 S. 4TH STREET
ARTESIA **NM 88210**

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **N TURKEY TR MV #1**
Order: **0603135 YAT01** Receipt: **03-07-06**

William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Sample: ***1. MIDDLE PIT 1'*** Collected: *03-03-06 10:00:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0001A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.7	16887-00-6	Chloride	111	mg / Kg	5	0.5		03-08-06	03-09-06

Sample: ***2. MIDDLE PIT 2'*** Collected: *03-03-06 10:20:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0002A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.30	16887-00-6	Chloride	1560	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***3. MIDDLE PIT 3'*** Collected: *03-03-06 10:30:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0003A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.31	16887-00-6	Chloride	3130	mg / Kg	50	0.5		03-08-06	03-09-06

Report Date: *3/14/2006 4:19:25 PM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **N TURKEY TR MV #1**

Order: **0603135** **YAT01** Receipt: **03-07-06**

Sample: ***4. MIDDLE PIT 4'*** Collected: *03-03-06 10:35:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0004A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.32	16887-00-6	Chloride	2090	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***5. NE CORNER PIT 1'*** Collected: *03-03-06 10:45:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0005A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.11	16887-00-6	Chloride	526	mg / Kg	5	0.5		03-08-06	03-09-06

Sample: ***6. NE CORNER PIT 2'*** Collected: *03-03-06 10:50:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0006A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.33	16887-00-6	Chloride	1220	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***7. NE CORNER PIT 3'*** Collected: *03-03-06 11:00:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0007A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.34	16887-00-6	Chloride	5000	mg / Kg	500	0.5		03-08-06	03-09-06

Sample: ***8. NE CORNER PIT 4'*** Collected: *03-03-06 11:05:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0008A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.35	16887-00-6	Chloride	4760	mg / Kg	500	0.5		03-08-06	03-09-06

Sample: ***9. SW CORNER PIT 1'*** Collected: *03-03-06 11:20:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0009A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.36	16887-00-6	Chloride	1140	mg / Kg	50	0.5		03-08-06	03-09-06

Report Date: *3/14/2006 4:19:25 PM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **N TURKEY TR MV #1**
Order: **0603135 YAT01** Receipt: **03-07-06**

Sample: ***9. SW CORNER PIT 1'*** Collected: *03-03-06 11:20:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date

Sample: ***10. SW CORNER PIT 2'*** Collected: *03-03-06 11:30:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0010A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.37	16887-00-6	Chloride	1940	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***11. SW CORNER PIT 3'*** Collected: *03-03-06 11:35:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0011A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.38	16887-00-6	Chloride	4670	mg / Kg	500	0.5		03-08-06	03-09-06

Sample: ***12. SW CORNER PIT 4'*** Collected: *03-03-06 11:40:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0012A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.39	16887-00-6	Chloride	6570	mg / Kg	500	0.5		03-08-06	03-09-06

Sample: ***13. NW CORNER PIT 1'*** Collected: *03-03-06 11:50:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0013A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.20	16887-00-6	Chloride	94.9	mg / Kg	5	0.5		03-08-06	03-09-06

Sample: ***14. NW CORNER PIT 2'*** Collected: *03-03-06 11:55:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0014A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.21	16887-00-6	Chloride	312	mg / Kg	5	0.5		03-08-06	03-09-06

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **N TURKEY TR MV #1**
Order: **0603135 YAT01** Receipt: **03-07-06**

Sample: ***15. NW CORNER PIT 3'*** Collected: *03-03-06 12:00:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0015A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.41	16887-00-6	Chloride	1180	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***16. NW CORNER PIT 4'*** Collected: *03-03-06 12:05:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0016A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.42	16887-00-6	Chloride	1380	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***17. NE CORNER PIT 1'*** Collected: *03-03-06 12:20:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0017A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.43	16887-00-6	Chloride	1340	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***18. NE CORNER PIT 2'*** Collected: *03-03-06 12:30:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0018A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.44	16887-00-6	Chloride	3210	mg / Kg	50	0.5		03-08-06	03-09-06

Sample: ***19. NE CORNER PIT 3'*** Collected: *03-03-06 12:35:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0019A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06178	WC.2006.614.45	16887-00-6	Chloride	4990	mg / Kg	500	0.5		03-08-06	03-09-06

Sample: ***20. NE CORNER PIT 4'*** Collected: *03-03-06 12:45:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0020A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.39	16887-00-6	Chloride	3000	mg / Kg	50	0.5		03-10-06	03-13-06

Report Date: *3/14/2006 4:19:26 PM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **N TURKEY TR MV #1**

Order: **0603135** **YAT01** Receipt: **03-07-06**

Sample: ***20. NE CORNER PIT 4'*** Collected: *03-03-06 12:45:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date

Sample: ***21. SURFACE PIT*** Collected: *03-03-06 15:50:00* By: *MS*

Matrix: ***GRABCOMP***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603135-0021A		**SW846 9056 Anions by Ion Chromatography**						By: JTK		
W06186	WC.2006.637.23	16887-00-6	Chloride	281	mg / Kg	10	0.5		03-10-06	03-11-06

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

MEMO: Samples were received with no ice.

Report Date: 3/14/2006 4:19:26 PM

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: [illegible] Date ____

Page 1 of 2

Client: Yates Petroleum Corp.
Address: 105 South 4th Street
City / State / Zip: Artesia, N.M. 88210
Project Name / Number: [illegible]
Contract / Purchase Order / Quote: [illegible]

Project Manager / Contact: Mike Stubblefield
Telephone No.: 505 748-4500 [illegible]
Fax No.: [illegible]
Samplers: (signature) [illegible]

AALI Fraction Number (OFFICE USE ONLY)	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers — Chlorides									Remarks
1A	1 Middle Pit [illegible]	3/3/06	10:45A	Grab			None	✓									
2A	2 Middle [illegible]	3/3/06	[illegible]	"			"	✓									
3A	3 Middle [illegible]	[illegible]	11:00A	"				[illegible]									
4A	4 [illegible]	[illegible]	[illegible]	"				[illegible]									
5A	5 NE Corner Pit [illegible]	[illegible]	[illegible]	"													
6A	6 NE Corner Pit [illegible]	[illegible]	[illegible]	"				✓									
7A	7 NE Corner Pit 7'	3/3/06	11:00A	"			"	✓									
8A	8 NE Corner Pit 4'	3/3/06	11:05A	"			"	✓									
9A	9 SW Corner Pit 1'	3/3/06	11:20A	"			"	✓									
10A	10 SW Corner Pit 2'	3/3/06	11:30A	"			"	✓									
11A	11 SW Corner Pit 3'	3/3/06	11:35A	"			"	✓									
12A	12 SW Corner Pit 4'	3/3/06	11:40	"			"	✓									

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature: Mike Stubblefield	Date: 3/6/2006	Signature:	Signature:	Date: 3/7/06	Signature: [illegible]
Printed: Mike Stubblefield	Time: 11:00 AM	Printed:	Printed:	Time: 10:15	Printed: [illegible]
Company: Yates Petroleum Corp.		Company:	Company:		Company: [illegible]
Reason: Testing Chlorides		Reason:	Reason:		Reason:

Method of Shipment: Bus
Shipment No. ____
Special Instructions: ____

Comments: VOID

After analysis, samples are to be:
- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

CARRIER

Chain of Custody Record

ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: 060155 Date _____

Page 2 of 2

Client Yates Petroleum Corp

Address 105 South 4th Street

City / State / Zip Artesia NM 88210

Project Name / Number [illegible]

Contract / Purchase Order / Quote [illegible]

Project Manager / Contact mike Stubblefield

Telephone No. 505-748 4500

Fax No. 505-748 4585

Samplers : (signature) mike Stubblefield

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation: Temp.	Preservation: Chemical	No. of Containers	Remarks
1	[illegible]	3/15/06	[illegible]	[illegible]			[illegible]	1	
2	[illegible]	3/15/06	[illegible]					1	
3	[illegible]	3/15/06	[illegible]					1	
4	[illegible]	[illegible]	[illegible]					1	
5	[illegible]	3/15/06	[illegible]					1	
6	[illegible]	3/15/06	[illegible]					1	
7	[illegible]	3/15/06	[illegible]					1	
8	[illegible]	3/15/06	[illegible]					1	
9	[illegible]	3/15/06	[illegible]	[illegible]	[illegible]			1	
10	[illegible]	3/15/06	[illegible]						

Relinquished by:	Date	Received by:	Relinquished by:	Date	Received by:
Signature mike Stubblefield	3/16/2006	Signature	Signature	3/17/06	Signature
Printed mike Stubblefield	Time 11:00 AM	Printed	Printed	Time 10:15	Printed
Company Yates Petroleum Corp.		Company	Company		Company
Reason Testing (Chloride)		Reason	Reason		Reason

Method of Shipment BUS

Shipment No. _____

Special Instructions: _____

Comments: No Ice

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

CARRIER

ASSAIGAI
ANALYTICAL
LABORATORIES, INC.
4301 Masthead NE, Ste. A • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

Explanation of codes	
B	*Analyte Detected in Method Blank*
E	*Result is Estimated*
H	*Analyzed Out of Hold Time*
N	*Tentatively Identified Compound*
S	*Subcontracted*
1-9	*See Footnote*

YATES PETROLEUM CORP.
attn: **MIKE STUBBLEFIELD**
105 S. 4TH STREET
ARTESIA **NM 88210**

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**
Project: **HILLVIEW AHE #6**
Order: **0603136** **YAT01** Receipt: **03-07-06**

William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Sample: ***1. NE CORNER PIT 2'*** Collected: *03-02-06 10:10:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0001A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.4	16887-00-6	Chloride	2420	mg / Kg	50	0.5		03-10-06	03-10-06

Sample: ***2. NE CORNER PIT 3'*** Collected: *03-02-06 10:15:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0002A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.6	16887-00-6	Chloride	1280	mg / Kg	10	0.5		03-10-06	03-10-06

Sample: ***3. NE CORNER PIT 4'*** Collected: *03-02-06 11:30:00* By: *MS*
Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0003A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.7	16887-00-6	Chloride	1550	mg / Kg	10	0.5		03-10-06	03-10-06

Report Date: *3/14/2006 4:22:36 PM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **HILLVIEW AHE #6**

Order: **0603136** **YAT01** Receipt: **03-07-06**

Sample: ***4. NW CORNER PIT 2'*** Collected: *03-02-06 12:15:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0004A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.28	16887-00-6	Chloride	3370	mg / Kg	50	0.5		03-10-06	03-13-06

Sample: ***5. NW CORNER PIT 3'*** Collected: *03-02-06 14:20:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0005A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.29	16887-00-6	Chloride	2570	mg / Kg	50	0.5		03-10-06	03-13-06

Sample: ***6. NW CORNER PIT 4'*** Collected: *03-02-06 14:30:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0006A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.11	16887-00-6	Chloride	1410	mg / Kg	10	0.5		03-10-06	03-10-06

Sample: ***7. SW CORNER PIT 2'*** Collected: *03-02-06 14:40:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0007A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.30	16887-00-6	Chloride	7410	mg / Kg	100	0.5		03-10-06	03-13-06

Sample: ***8. SW CORNER PIT 3'*** Collected: *03-02-06 15:30:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0008A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.31	16887-00-6	Chloride	8090	mg / Kg	100	0.5		03-10-06	03-13-06

Sample: ***9. SW CORNER PIT 4'*** Collected: *03-02-06 15:45:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0009A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.32	16887-00-6	Chloride	5290	mg / Kg	100	0.5		03-10-06	03-13-06

Report Date: *3/14/2006 4:22:36 PM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **HILLVIEW AHE #6**

Order: **0603136** **YAT01** Receipt: **03-07-06**

Sample: ***9. SW CORNER PIT 4'*** Collected: *03-02-06 15:45:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date

Sample: ***10. SE CORNER PIT 2'*** Collected: *03-02-06 16:00:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0010A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.15	16887-00-6	Chloride	1060	mg / Kg	10	0.5		03-10-06	03-11-06

Sample: ***11. SE CORNER PIT 3'*** Collected: *03-02-06 16:15:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0011A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.16	16887-00-6	Chloride	247	mg / Kg	10	0.5		03-10-06	03-11-06

Sample: ***12. SE CORNER PIT 4'*** Collected: *03-02-06 16:30:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0012A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.17	16887-00-6	Chloride	205	mg / Kg	10	0.5		03-10-06	03-11-06

Sample: ***13. MIDDLE PIT 2'*** Collected: *03-02-06 16:45:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0013A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.33	16887-00-6	Chloride	4620	mg / Kg	100	0.5		03-10-06	03-13-06

Sample: ***14. MIDDLE PIT 3'*** Collected: *03-02-06 16:50:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0014A		SW846 9056 Anions by Ion Chromatography						By: JTK		
W06186	WC.2006.637.37	16887-00-6	Chloride	6020	mg / Kg	100	0.5		03-10-06	03-13-06

Report Date: *3/14/2006 4:22:36 PM*

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **YATES PETROLEUM CORP.**

Project: **HILLVIEW AHE #6**

Order: **0603136 YAT01** Receipt: **03-07-06**

Sample: ***15. MIDDLE PIT 4'*** Collected: *03-02-06 17:00:00* By: *MS*

Matrix: ***GRAB***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0603136-0015A		**SW846 9056 Anions by Ion Chromatography**						By: JTK		
W06186	WC.2006.637.38	16887-00-6	Chloride	5760	mg / Kg	100	0.5		03-10-06	03-13-06

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

MEMO: Samples were received with no ice.

Report Date: *3/14/2006 4:22:36 PM*

Chain of Custody Record

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Lab job No.: [illegible] Date _____

Page 1 of 2

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client Yates Petroleum Corp.

Address 105 S. 4th Street

City / State / Zip Artesia, N.M. 88210

Project Name / Number Hillview AHE #6

Contract / Purchase Order / Quote [illegible]

Project Manager / Contact Mike Stubblefield

Telephone No. 505 748-4500

Fax No. 505 746-4631

Samplers : (signature) [signature]

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation: Temp.	Preservation: Chemical	No. of Containers	Remarks
1	[illegible]	[illegible]	[illegible]						
2	[illegible]	[illegible]	[illegible]						
3	[illegible]	[illegible]	[illegible]						
4	[illegible]	[illegible]	[illegible]						
5	[illegible]	[illegible]	[illegible]						
6	[illegible]	[illegible]	[illegible]						
7	[illegible]	[illegible]	[illegible]						
8	[illegible]	[illegible]	[illegible]						
9	[illegible]	[illegible]	[illegible]						
10	[illegible]	[illegible]	[illegible]						
11	[illegible]	[illegible]	[illegible]						
12	[illegible]	[illegible]	[illegible]						

Relinquished by:	Date	Received by:	Relinquished by:	Date	Received by:
Signature [signature]	3/6/2006	Signature _____	Signature _____	3/7/06	Signature [signature]
Printed Mike Stubblefield	Time 11:00Am.	Printed _____	Printed _____	Time 10 15	Printed [illegible]
Company Yates Petroleum Corp.		Company _____	Company _____		Company [illegible]
Reason Testing. Monitoring.		Reason _____	Reason _____		Reason _____

Method of Shipment Bus.

Shipment No. _____

Special Instructions: _____

Comments: No Ice

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

CARRIER

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab Job No.: [illegible] Date _____

Page 2 of 2

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client Yates Petroleum Corp.

Address 105 S 4th Street

City / State / Zip Artesia, NM, 88210

Project Name / Number [illegible]

Contract / Purchase Order / Quote 052972

Project Manager / Contact Mike Stubblefield

Telephone No. 505-748-4176

Fax No. 505-748-4572

Samplers : (signature) [signature]

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation: Temp.	Preservation: Chemical	No. of Containers	Remarks
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	

Relinquished by:
Signature [signature]
Printed Mike Stubblefield
Company Yates Petroleum Corp
Reason Testing Chloride

Date 3/6/2006
Time 11:00 AM

Received by:
Signature _____
Printed _____
Company _____
Reason _____

Relinquished by:
Signature _____
Printed _____
Company _____
Reason _____

Date 3/7/06
Time [illegible]

Received by:
Signature [signature]
Printed [illegible]
Company [illegible]
Reason _____

Method of Shipment Bus
Shipment No. _____
Special Instructions: _____

Comments: No Tag

After analysis, samples are to be:
- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

CARRIER

FRONTIER LABS, INC.

A South Dakota Corporation

May 2nd, 2006

To whom it may concern:

A short preface is needed to define the job of calcium. Calcium exists throughout the entire plant. Although used for many different processes, it is most important for growth. Calcium has a regulating effect in the cell of the plant and contributes to the continued stability of the plant.

Calcium is a very heavy mineral and migrates down into the soil while exhibiting very little lateral movement. Proper levels of calcium within the plant strengthen the whole plant and allow for efficient use of sunlight, carbon dioxide, water, nitrogen and mineral nutrients. Calcium makes nutrients available to the plant for higher energy and plays a major role in plant physiology by strengthening physical structure and helping in protection from disease attacks. Calcium also plays a vital part in the construction of numerous hormones and enzyme systems that protect the plant. It has been reported that as a pathogen probes its way into a cell it injects an enzyme to help break that cell down. There is research that suggests that, as this occurs, proper levels of calcium within the cell can actually slow this attack down or stops it all together.

Calcium is only absorbed close to the root tip. It has not been proven that calcium is absorbed through the foliage of a plant under any conditions. Calcium is absorbed as calcium (Ca++) ions. These ions move into the roots in two ways. First, calcium enters the plant as water is moved from the soil and into the root. The roots or mass flow are pulled along into the soil solution as the plant takes up the water. Secondly, calcium ions are absorbed by root interception as the root tip conveniently bumps into calcium while it explores the soil.

Elevated salt levels are indication of a calcium deficiency. Chemicals and fertilizers typically contain salts as carriers or preservatives and without calcium these salts can build up in the soil. Calcium lowers salts by combining with the sodium ion and allowing the chloride to gas off harmlessly. Beneficial bacteria do not like salt and will have difficulty living in a saline environment. Without a healthy population of beneficial bacteria organic matter will oxidize rather than be absorbed back into the earth. The carbon in the organic matter does not get converted into sugar so the sugar content of the soil decreases and the sugar content of plants grown in that soil will also decrease. Low sugar soils and plants give off high infrared, which is visible up to eight miles by plant feeding insects.

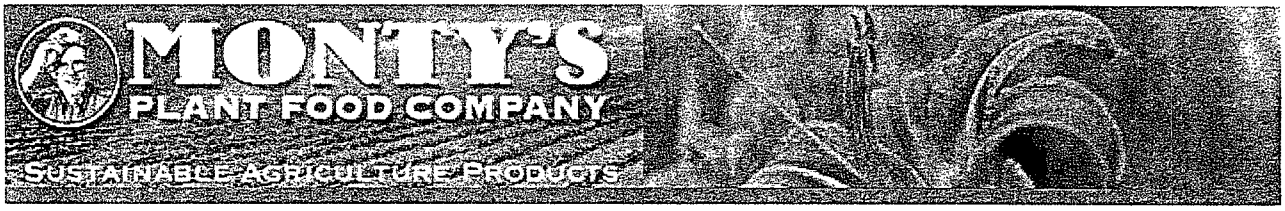
Unlike any product currently on the market, Calcium attacks and corrects the cause of the problem rather than reacting only to the symptoms. Calcium is the tour guide and referee to nutrients in the soil. Calcium lowers the conductivity of the soil, and with a lower conductivity minerals that were previously locked up are now available for the

plant's use. Calcium allows and guides phosphorus to the plants. This process is the start of photosynthesis (production of sugar.) Sugar is energy to the plant and energy increases the growth, structure and nutrient content of the plant. Throughout the world, we stand confident in knowing that the addition of calcium is the only solution to a wide source of soil problems, including salt, sodium, fungi, weeds, insects, pH, drought and plant sugars in your plants. The growth, health and productivity of all plants is determined by the balance and interaction of many nutrients. Calcium's role is to use it's electrical power to assist other minerals for an overall healthy soil that produces quality food.

The above information is for help in understanding the role that Genesis Soil-Rite plays in the reclamation of your sites. If you have further questions, please don't hesitate to call. (505) 746-7708.

HAPPY FARMS

David Crawford



MONTYS

Company Information

Monty's Plant Food Company was founded in 1997 to manufacture, market and sell a line of highly natural plant food and plant enhancement products. Our business philosophy remains committed to finding and utilizing the best resources and latest technologies to produce products that assist in promoting a healthier, more efficient and better yielding plant.

As a progressive company, we have continued to focus our efforts on the development of highly natural, environmentally friendly products that achieve maximum efficiencies for the plants health and optimum yields. We are open to exploring new and innovative ways to continue this effort. We are open to new ideas and are always looking to develop strategic alliances with individuals, companies, and research facilities in an effort to optimize synergistic resources.

Monty's Plant Food Company is experiencing rapid growth as our products become tested and utilized both in and outside of the United States. We continue to expand our distribution and trades relationships with dealers and distributors serving the agriculture – crop and pasture, commercial growers, turf and hydro-seeding applications, nurseries and retail garden centers.

Monty's Plant Food Company believes in developing a strong distribution network for our products. We believe that long-term the most efficient manner to build and service our customers is through qualified dealers and distributors network that is capable of representing and communicating both today and tomorrow's technologies that we produce.

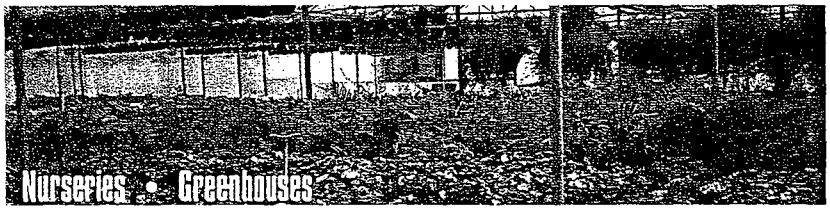
www.montysplantfood.com

MONTY'S OPTIMUM YIELD
Liquid Plant Food

Monty's Liquid Plant Food is a specially formulated fertilizer that can supply and enable existing natural nutrients to be used by the plant promoting stronger, more productive growth. It can be used in the root zone or as a foliar spray, which is the most effective and efficient method of managing trace element requirements for crops and pastures. It is a concentrated liquid plant food of unsurpassed quality at an unparalleled price. Monty's Liquid Plant Food is a naturally derived combination of quality ingredients that together promotes faster root development, stronger plant growth and increased plant yields.

Monty's Plant Food includes the following advantages:

- Reduces input costs without sacrificing results
- Nearly pH neutral 6.5-7.5
- Increases quantity and quality of harvest
- Overcomes nutrient deficiencies
- Equally effective when used on neutral or acid-loving plants
- Compatible with most herbicides, insecticides and fungicides



Monty's Plant Food is available in three formulations:

All formulations promote quick plant response and are completely safe.

4-15-12 Green Label — SEED STARTER

A broad use liquid seed starter for quicker germination, increases root formation, and early absorption of critical nutrients. This formulation promotes early root vigor and assists in developing early resistance. Use this formulation to provide early vigor in germinating seeds and seedlings.

2-15-15 Orange Label — ROOT & BLOOM

A bloom and yield enhancer that is rich in essential plant nutrients. This formulation provides root and bloom nutrients, promotes bloom development, and increases plant yield. Use this formulation as a bloom stimulant to increase plant yield while reducing plant stress.

8-16-8 Yellow Label — GROWTH

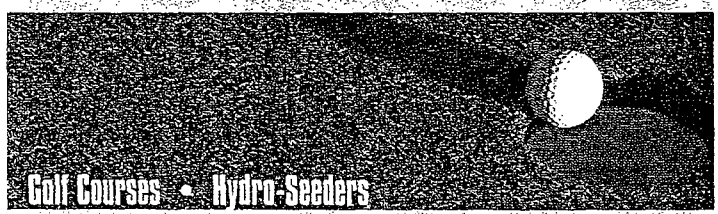
A broad use root zone or foliar plant food. This formula promotes new growth, root and top growth and larger foliage. Use this formulation to increase plant growth after seed germination.

Monty's Plant Food contains only the highest quality raw materials. It also contains a buffer, which prevents burning, makes phosphate and iron more available, stimulates root growth, improves germination and aids in rapid translocation of nutrients within the plant. Monty's Liquid Plant Food formulations also provide versatility – for root development and foliar feeding. Large, dark green foliage promotes healthy, vigorous growth.

- Low salt index (< .005)
- Non-detectable chlorine amounts
- Virtually odorless — Non-corrosive
- Will not freeze above -20F or separate into component parts.
- Will not harm plants, regardless of incidence of use or amount applied

Application recommendation:

Standard dilution rate for general foliar spray application is 16 ounces p acre applied with 15 gallons of water. For dilution rates for root zone, seed starter or reduced water applications, please consult your dealer.



Packaging:

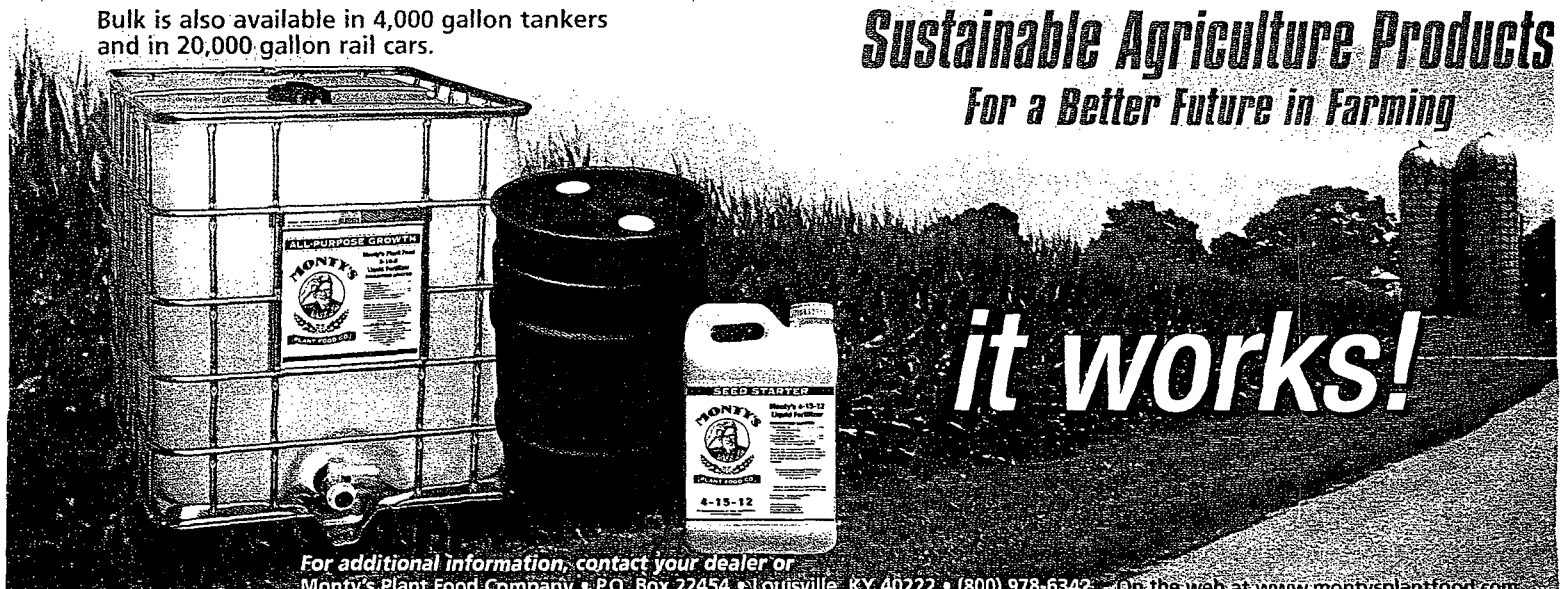
Monty's Plant Food is highly concentrated. It can be applied to the root zone or as a foliar spray. Monty's Plant Food is available both in bottles and bulk.

- 1 Gallon Bottle
- 2.5 Gallon Bottle
- 30 Gallon Drum
- 280 Gallon Tote

Bulk is also available in 4,000 gallon tankers and in 20,000 gallon rail cars.

Sustainable Agriculture Products

For a Better Future in Farming



For additional information, contact your dealer or
Monty's Plant Food Company • P.O. Box 22454 • Louisville, KY 40222 • (800) 978-6342 • On the web at www.montys-plantfood.com

Monty's contains an activated humic substance.

Some qualities of Humics

- Contain varying amounts of sulfur, nitrogen, phosphorus, calcium, magnesium, copper and zinc
- Helps break up clay & compacted soils
- Assists in transferring micro-nutrients to the plant
- Improves trace element nutrition through chelation
- Enhances moisture retention
- Increases seed germination rate & increased root structure
- Stimulates development of micro-organisms in the soil
- Binds ions
- Nitrogen is more readily available to a plant when used with a humic acid
- Acts as a buffer to prevent burn

Monty's has a LOW Salt Index.

- Salts cause clay platelets to attract (compacts soil)
- Salts deplete microbial activity in the soil
- Salts inhibit moisture uptake by the plant

Try one of the following applications of Monty's Liquid Fertilizer

1. Herbicide Application - "Burn Down"

When applying herbicide for "burn down" purposes, add 8 ounces of Monty's 8-16-8 per 100 gallons of tank mix. If you are getting 10 acres of coverage from 100 gallons of mix, using Monty's to assist in "burn down" will cost around .30 per acre. Monty's will act as a rapid transport vehicle to carry the herbicide where it is most effective... to the root!

2. Post Emergent Herbicide Application (all crops)

When applying post emergent herbicides, add 16 ounces of Monty's 8-16-8 per acreage of coverage. Not only will the addition of Monty's to your herbicide assist in a faster more complete weed kill, it will also provide a "boost" of NPK that crops often need at this time of the growing cycle; due to "leaching of" and "inactive" pre-applied fertilizers. We call this, the "Weed & Feed" application.

When applying Monty's with any herbicide, pesticide or fungicide: we suggest administering a "jar test" (& water) to verify compatibility. When mixing Monty's with any herbicide, pesticide or fungicide, add Monty's to the tank mixture **AFTER** the herbicide, pesticide or fungicide has been mixed and diluted with water.

3. All Forage Crops

Apply 16 ounces of Monty's 8-16-8 per acre. First application to be early spring when growth is 2 to 4 inches (or at green-up). If cost effective, a follow-up application is suggested 2 weeks later. This follow-up application to be determined based on cost of current fertilizer program versus Monty's. In-season applications should be 5 to 10 days after every cutting. Forage crops receiving Monty's should prove to be more productive as season progresses and as suggested applications are applied.
New plantings should have Monty's 4-15-12 Seed Starter applied as well, at a rate of 24 ounces per acre. A late fall application of 2-15-15 is suggested at a rate of 16 ounces per acre. Call (800) 978-6342 for further information.

4. Pastures

Apply 16 ounces of Monty's 8-16-8 per acre. First application to be early spring. Can be applied with herbicide, pesticide or fungicide to eliminate additional pass in field. Follow up applications to be monthly or bi-monthly and based on cost efficiency. A late fall application of 2-15-15 is suggested at a rate of 16 ounces per acre.

5. Corn, Soybeans, Silage, Wheat, Cotton, Peanuts,

Apply 24 ounces of Monty's 4-15-12 per acre, at planting. Best results when fertilizer & water solution is applied directly to the seed. One foliar application of Monty's 8-16-8 should be applied at herbicide pass or when plants are 4 to 7 inches high at a rate of 16 ounces per acre. Monty's 2-15-15 should be applied as a "finisher" prior to bloom stage. If continued plant growth is the objective and not "the pushing of fruit or bloom", a second Monty's 8-16-8 application can be applied instead of 2-15-15 as a "finisher".

6. Vegetable Crops

Apply 16 ounces of Monty's 8-16-8 per acre, "over the top" or through drip-irrigation (at the root). If manually applying with a tank sprayer, 1 teaspoon per 2 gallons of water, foliar applied weekly or bi-weekly. When desired growth has been reached and objective becomes to "push fruit or bloom", then Monty's 2-15-15 should be applied at the same rates as above. When growing Root Crops, using Monty's 2-15-15 throughout the growing process, is recommended.

7. **Tobacco** Use Monty's one or all of the following suggested applications:

   1) 16 ounces Monty's 8-16-8 per acre in setter barrel at planting

   2) 16 ounces Monty's 8-16-8 per acre in setter barrel at planting
      plus
      16 ounces Monty's 8-16-8 per acre "over the top" at "lay by" stage

   3) 16 ounces Monty's 8-16-8 per acre in setter barrel at planting
      plus
      16 ounces Monty's 8-16-8 per acre "over the top" at "lay by" stage
      plus
      16 ounces Monty's 2-15-15 per acre applied with sucker spray

8. Bare Root Crops (such as vines and trees)

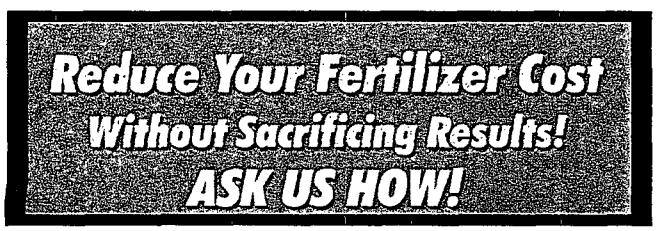
At planting, soak bare root plants in 5 gallon bucket (or other) with 2 gallons of water + 1 to 2 ounces of Monty's 2-15-15 for approximately 1 hour, or while planting. Follow up root feedings should be 1 teaspoon of Monty's 2-15-15 per 2 gallons, per plant (when watering). Once plant has obtained 30 to 50% foliage cover, you should foliar feed with Monty's 8-16-8 at a rate of 16 ounces per acre if you have means to calibrate application or 8 ounces to 100 gallons of water, if manually applying the product. Mature plants should be fertilized with the Monty's 2-15-15 formulation for maximum production.

9. Wildlife Food Plots

At planting, either treat seed prior to planting with Monty's 4-15-12 Seed Starter or foliar spray seedlings as they emerge from ground. Foliar spray food plots as often as desired. Use the 8-16-8 formulation for growth. Use the 2-15-15 formulation as a winterizer in late fall and as a root stimulator in early spring for existing plots.

www.montysplantfood.com

800-978-6342



Monty's Plant Food Co.
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Louisville, KY 40222
(800) 978-6342
www.montysplantfood.com

If you answer "yes" to any of these questions, your soil may need Monty's Liquid Carbon.

"Do you have heavy clay soils or segments of your fields that are heavy in clay?"

"Are your fields compacted from years of farming (high salt fertilizers, tillage and traffic)?"

"Do you have muddy water runoff from your field?"

"Do segments of your fields have poor drainage due to compaction, and hardpans?"

"Are fertilizer recommendations coming back higher and higher every year?"

"Do you have sandy soils and want to increase the moisture retention potential?"

"Do you want to optimize root development of your plants by increased aeration of your soils?"

"Do you witness poor or uneven growth in parts of your fields?"

"Do you want to optimize your soils productivity giving you a better chance of higher yields?"

All We're Asking For Is One Afternoon.

Introducing Time In A Bottle: Nature developed your soils by incorporating a cycle of life, death, and decay. Over time, these layers became your rich, fertile topsoil. Today, however, those natural systems are out of balance resulting in a depletion of available nutrients within your soil profile and an increased dependency on chemical additives, like fertilizer. Monty's Liquid Carbon will help return your soils to a more balanced state. By incorporating our advanced Humic Technology you can expect to see soils improve in as little as two weeks. We have captured the essential elements from the breakdown of organic matter and placed them in every bottle of Monty's Liquid Carbon. The result is an improved soil structure, increased water holding capacity, reduced hardpan, improved aeration and an increased organic matter wherever it is applied. Give us a few hours this week. We'll give you better soils.

MONTY'S LIQUID CARBON SOIL CONDITIONER

MONTY'S LIQUID CARBON SOIL CONDITIONER

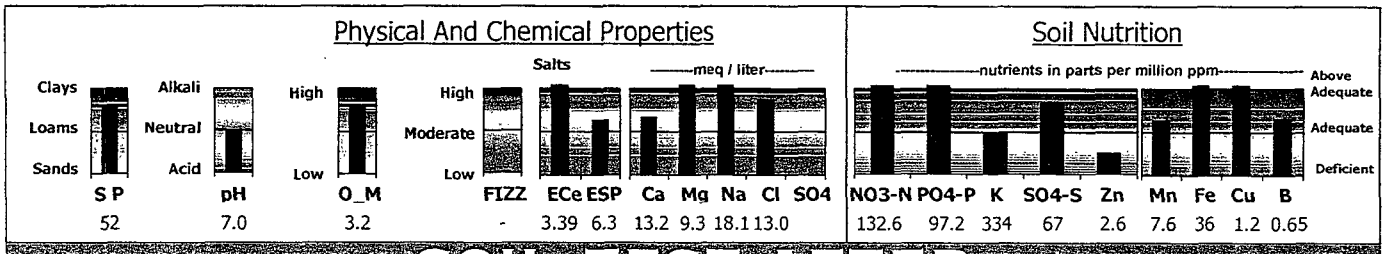
Monty's Liquid Carbon Suggested Application

Apply ½ gallon (64 ounces) per acre in 15-30 gallons of water. Apply to soil directly. Although Monty's Liquid Carbon can be applied all year, better results will be achieved with a spring or fall application.

Gallons	Cost Coverage	Cost	Cost Per Acre
2.5	5 acres	$47.50	$ 9.50
30	60 acres	540.00	9.00
275	550 acres	4,400.00	8.00

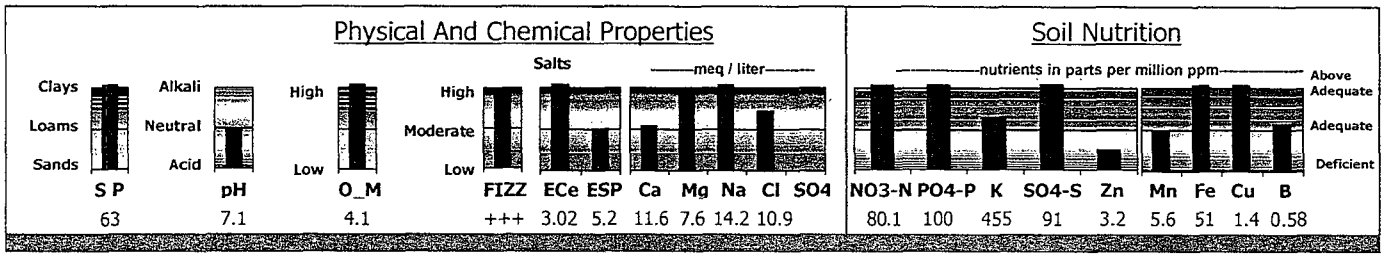
SOIL TEST BEFORE

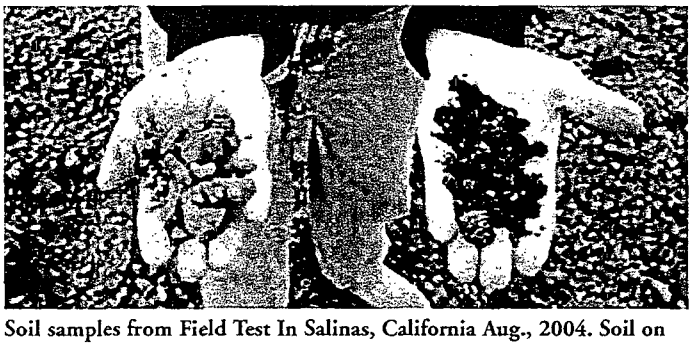
CROP LETTUCE-SPRING Soil Tests conducted by Precision Agri Lab Madera, CA **DATE SAMPLED:** 8/13/2004



SOIL TEST AFTER

CROP LETTUCE-SPRING Soil Tests conducted by Precision Agri Lab Madera, CA **DATE SAMPLED:** 8/26/2004





Soil samples from Field Test In Salinas, California Aug., 2004. Soil on right was treated with Monty's Liquid Carbon and reexamined in two weeks. Sample on left was untreated. Notice the difference in color, texture and clod size.

Both tests were conducted on the same plot of land. The only additive was **Monty's Liquid Carbon.** In just two weeks, notice the following: 21% increase in water holding capacity (SP), the more neutral pH, 28% increase in Organic Matter (OM), and the dramatic reversal in FIZZ - the amount of organic activity in the soils. Salts were lowered, including a 21% decrease in Sodium (Na), Calcium (Ca) and Magnesium (Mg) were brought into balance for better utilization, and most every area of soil nutrition was increased, some by as much as 50%, leaving no element with a deficiency.

Soil Organic Matter is decomposing plant and animal life. Bacteria, fungi, and microbes are responsible for the breakdown of these materials. **Liquid Carbon** encourages healthy soils allowing these organisms to flourish. This process converts and releases nutrients in a useable form to the soil.

Humus results from the breakdown of organic matter and acts as a storage vessel for soil nitrogen, calcium, magnesium, and other micronutrients. Humus improves soil structure, aeration, drainage, and water holding capacity. It serves as a food source for microorganisms, acts as a plant growth stimulator, and increases soil exchange capacity.

For More Information, visit us on the Web at:

www.montysplantfood.com

or call us at

(800) 978-6342

Monty's Plant Food Co.
PO Box 22454
Louisville, KY 40222

MONTY'S PLANT FOOD CO.

Monty's Plant Food Co.
Ready Reference Sheet

Monty's Liquid Fertilizer: Available in 3 formulations (2-15-15) (4-15-12) (8-16-8)

Root & Bloom (2-15-15)
Growth Formula (8-16-8)

1 gallon container	Covers 8 acres	Farmer Cost = $54.00	$6.75 per acre
2.5 gallon container	Covers 20 acres	Farmer Cost = $120.00	$6.00 per acre
30 gallon drum	Covers 240 acres	Farmer Cost = $1,380.00	$5.75 per acre
275 gallon tote	Covers 2,200 acres	Farmer Cost = $12,100.00	$5.50 per acre

Seed Starter (4-15-12)

1 gallon container	Covers 5.33 acres	Farmer Cost = $54.00	$10.13 per acre
2.5 gallon container	Covers 13.33 acres	Farmer Cost = $120.00	$9.00 per acre
30 gallon drum	Covers 160 acres	Farmer Cost = $1,380.00	$8.63 per acre
275 gallon tote	Covers 1,466 acres	Farmer Cost = $12,100.00	$8.25 per acre

Going To Apply To:	Seed Starter @ 24 ounces per acre	Growth Formula or Root & Bloom @ 16 ounces per acre
100 acres	18.75 gallons	12.50 gallons
200 acres	37.5 gallons	25 gallons
300 acres	56.25 gallons	37.50 gallons
400 acres	75 gallons	50 gallons
500 acres	93.75 gallons	62.50 gallons
600 acres	112.50 gallons	75 gallons
700 acres	131.25 gallons	87.50 gallons
800 acres	150 gallons	100 gallons
900 acres	168.75 gallons	112.50 gallons
1,000 acres	187.50 gallons	125 gallons

Monty's Liquid Carbon - Soil Conditioner

...is designed to aid in breaking down organic matter. It will increase the moisture retention of your soil. Contained in this product is an activated humic product with proprietary technology.

"Give Mother Nature a Helping Hand" with Monty's Liquid Carbon

Apply at a rate of ½ gallon in a minimum of 15 gallons of water per acre.
Apply directly to the soil in late fall or early winter.

2.5 gallons covers 5 acres =	**$47.50**	**Equates to $9.50 per acre**
30 gallons covers 60 acres =	**$540.00**	**Equates to $9.00 per acre**
275 gallons covers 550 acres =	**$4,400.00**	**Equates to $8.00 per acre**

Monty's Plant Food Co.
PO Box 22454
Louisville, KY 40222

Local (502) 489-9888
Toll Free (800) 978-6342
Fax (502) 489-9890

Please call with questions or visit our website at www.montysplantfood.com

MATERIAL SAFETY DATA SHEET
Monty's Liquid Carbon Soil Conditioner

Manufacturer: Monty's Plant Food Co., Inc. **Analysis:** Liquid Carbon
Address: P.O. Box 22454, Louisville, KY 40222 USA **Date:** August 30, 2004
11501 Plantside Drive, Ste 12, Louisville, KY 40299 **Prep by:** Dennis Stephens
Phone: (800) 978-6342 **Emergency #:** (502) 489-9888

SECTION I - MATERIAL IDENTIFICATION

CHEMICAL NAME AND SYNONYMS: None

TRADE NAME AND SYNOMYMS: Monty's Plant Food, Monty's Liquid Carbon

CHEMICAL FAMILY: Natural Organic Compound

FORMULA: None

SECTION II - INGREDIENTS AND HAZARDS

	%	Hazard Data	Typical Grade	%	Hazard Data
	N / A	N/A	N/A	N/A	N/A

Balance - Water & Trace Impurities

SECTION III - PHYSICAL DATA

Boiling point at 1 atm, degree F	-212	Specific gravity (H_2O = 1)	1.01 - 1.03
Vapor pressure at (n/m Hg)	Same as Water	Evap. Rate (not applicable = 1)	Unkown
Vapor density (Alt = 1)	N/A	Volalles, % by volume	N/A
Water solubility	99%	Molecular weight	N/A
pH	9.5 – 10.5		

Appearance & Odor: Dark Brown/Black liquid with no apparent odor

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits	LOWER	UPPER
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Extinguishing media: Solutions are non-flammable. If involved in a fire, use water.

Special fire fighting procedures: None

Unusual fire and explosion hazards: None

SECTION V - HEALTH HAZARD INFORMATION

Effects of overexposure: Solutions are considered to be low health hazards

FIRST AID: Eye Contact:	Flush eyes immediately and thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.
Skin Contact:	Flush skin immediately and thoroughly with water. If irritation persists, get medical attention. (Should only affect if allergic).
Inhalation:	Generally not considered an inhalation hazard.
Ingestion:	If conscious, immediately give large quantities of water and induce vomiting. Get medical attention immediately.

SECTION VI - REACTIVITY DATA

Stability	Stable	X	Conditions to avoid:	None
	Unstable			

Incompatibility (Materials to Avoid): Strong oxidizing chemical

Hazardous decomposition products: Carbon Dioxide, possibly carbon monoxide, sulfur dioxide & hydrocarbon

Hazardous Polymerization	May occur		Conditions to avoid:
	Will not occur	X	

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

SPILLS, LEAKS: (Steps to be taken): Wear protective clothing when cleaning up spills or leaks. Mop up or pump up major portions then dry mop remainder. Flush final traces with water.

WASTE DISPOSAL METHODS: Disposal may be subject to federal, state, and local regulations. User of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with an appropriate regulatory agent before discharging or disposing.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory protection (Specific Type): Respirators are not required under normal ventilated conditions. If heated to evolve ammonia, use appropriate protection. If misted by heat agitation or spray, use a mist respiration approved by NIOSH. Do not use single-use type.

Ventilation:	Local Exhaust:	Adequate	Special:	None
	Mechanical General:		Other:	None

Protective Gloves:	Rubber Gloves (only if allergies)	Eye Protection:	Safety glasses are recommended

Other protective equipment and precautions: Eye Wahs

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Storage and handling Information:

Other Precautions: None

DOT Class: Not Applicable

Judgement as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Monty's Plant Food Co., Inc. extends no warranties, makes no representations and assumes no responsibility as to accuracy or suitability of such information for application to purchaser's intended purpose or for consequences of its use.

Monty's Plant Food Co., Inc.

P.O. Box 22454
Louisville, Kentucky 40222

MATERIAL SAFETY DATA SHEET
MONTY'S - Award winning liquid plant food

Manufacturer: Monty's Plant Food Co., Inc.
Address: P.O. Box 22454, Louisville, KY 40222 USA
11902 Brinley Ave – 201, Louisville, KY 40243 USA
Phone: (800) 978-6342

Analysis: Formula 8-16-8
Date: June 7, 2002
Prep. By: John Petrey
Emergency #: (502) 489-9888

SECTION I - MATERIAL IDENTIFICATION

CHEMICAL NAME AND SYNONYMS: Nitrogen, phosphorus, potassium mixed fertilizer solution

TRADE NAME AND SYNOMYMS: Monty's Plant Food; Monty's Joy Juice; N - P - K mixed liquid fertilizer

CHEMICAL FAMILY: Inorganic Salt

FORMULA: Fertilizer Salt Complex

SECTION II - INGREDIENTS AND HAZARDS

	%	Hazard Data	Typical Grade	%	Hazard Data
Total Nitrogen as N	8 - 10	N / A	8 - 16 - 8		N / A
Total Phosphorus as P_2O_2	16 - 18	N / A			N / A
Total Potassium as K_2O	8 - 10	N / A			N / A

Balance - Water & Trace impurities

SECTION III - PHYSICAL DATA

Boiling point at 1 atm, degree F	-212	Specific gravity (H_2O = 1)	1.25 - 1.45
Vapor pressure at (n/m Hg)	N/A	Evap. Rate (not applicable = 1)	
Vapor density (Alt = 1)	N/A	Volailles, % by volume	N/A
Water solubility	Complete	Molecular weight	N/A
pH	6.5 - 7.9		

Appearance & Odor: Dark liquid, no apparent odor and/or very mild ammonia

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits	LOWER	UPPER
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Extinguishing media: N P K Solutions are non-flammable. If involved in a fire, use water.

Special fire fighting procedures: None

Unusual fire and explosion hazards: None

SECTION V - HEALTH HAZARD INFORMATION

Effects of overexposure: N P K Solutions are considered to be low health hazards

FIRST AID: Eye Contact:	Flush eyes immediately and thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.
Skin Contact:	Flush skin immediately and thoroughly with water. If irritation persists, get medical attention. (Should only affect if allergic).
Inhalation:	Generally not considered an inhalation hazard.
Ingestion:	If conscious, immediately give large quantities of water and induce vomiting. Get medical attention immediately.

SECTION VI - REACTIVITY DATA

Stability	Stable	X	Conditions to avoid:
	Unstable		When heated (e.g. in a fire) may give off ammonia gas

Incompatibility (Materials to Avoid): Water reactive materials

Hazardous decomposition products: Ammonia

Hazardous Polymerization	May occur		Conditions to avoid:
	Will not occur	X	

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

SPILLS, LEAKS: (Steps to be taken): Since N - P - K is a fertilizer, it may promote entrophication in waterways. In the case of spill, contain spill and maximize recovery. Mop up or pump up properly in metal or plastic containers.

WASTE DISPOSAL METHODS: Disposal of N - P - K, fertilizer may be subject to federal, state, and local regulations. User of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with an appropriate regulatory agent before discharging or disposing.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory protection (Specific Type): Respirators are not required under normal ventilated conditions. If heated to evolve ammonia, use appropriate protection. If misted by heat agitation or spray, use a mist respiration approved by NIOSH. Do not use single-use type.

Ventilation:	Local Exhaust:	Adequate	Special:
	Mechanical General:	Only if heated	Other:

Protective Gloves: Rubber Gloves (only if allergies) | Eye Protection: Safety glasses are recommended

Other protective equipment and precautions: Not generally required

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Storage and handling Information:

Other Precautions: None

DOT Class: Not Applicable

Judgement as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Monty's Plant Food Co., Inc. extends no warranties, makes no representations and assumes no responsibility as to accuracy or suitability of such information for application to purchaser's intended purpose or for consequences of its use.

Monty's Joy Juice

Plant Food for the Happy-Grow-Lucky

MATERIAL SAFETY DATA SHEET
MONTY'S - Award winning liquid plant food

Manufacturer: Monty's Plant Food Co., Inc.
Address: P.O. Box 22454, Louisville, KY 40222 USA
11902 Brinley Ave – 201, Louisville, KY 40243 USA
Phone: (800) 978-6342

Analysis: Formula 4-15-12
Date: June 7, 2002
Prep. By: John Petrey
Emergency #: (502) 489-9888

SECTION I - MATERIAL IDENTIFICATION

CHEMICAL NAME AND SYNONYMS:	Nitrogen, phosphorus, potassium mixed fertilizer solution	TRADE NAME AND SYNOMYMS:	Monty's Plant Food Monty's Joy Juice N - P - K mixed liquid fertilizer
CHEMICAL FAMILY:	Inorganic Salt	FORMULA:	Fertilizer Salt Complex

SECTION II - INGREDIENTS AND HAZARDS

	%	Hazard Data	Typical Grade	%	Hazard Data
Total Nitrogen as N	4 - 7	N / A	4 - 15 - 12		N / A
Total Phosphorus as P_2O_2	15 - 18	N / A			N / A
Total Potassium as K_2O	12 - 15	N / A			N / A

Balance - Water & Trace impurities

SECTION III - PHYSICAL DATA

Boiling point at 1 atm, degree F	-212	Specific gravity (H_2O = 1)	1.3 – 1.5
Vapor pressure at (n/m Hg)	N/A	Evap. Rate (not applicable = 1)	
Vapor density (Alt = 1)	N/A	Volailles, % by volume	N/A
Water solubility	Complete	Molecular weight	N/A
pH	6.5 - 7.9		

Appearance & Odor: Dark liquid, no apparent odor and/or very mild ammonia

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits	LOWER	UPPER
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Extinguishing media: N P K Solutions are non-flammable. If involved in a fire, use water.

Special fire fighting procedures: None

Unusual fire and explosion hazards: None

SECTION V - HEALTH HAZARD INFORMATION

Effects of overexposure: N P K Solutions are considered to be low health hazards

FIRST AID: Eye Contact:	Flush eyes immediately and thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.
Skin Contact:	Flush skin immediately and thoroughly with water. If irritation persists, get medical attention. (Should only affect if allergic).
Inhalation:	Generally not considered an inhalation hazard.
Ingestion:	If conscious, immediately give large quantities of water and induce vomiting. Get medical attention immediately.

SECTION VI - REACTIVITY DATA

Stability	Stable	X	Conditions to avoid:
	Unstable		When heated (e.g. in a fire) may give off ammonia gas

Incompatibility (Materials to Avoid): Water reactive materials

Hazardous decomposition products: Ammonia

Hazardous Polymerization	May occur		Conditions to avoid:
	Will not occur	X	

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

SPILLS, LEAKS: (Steps to be taken): Since N - P - K is a fertilizer, it may promote entrophication in waterways. In the case of spill, contain spill and maximize recovery. Mop up or pump up properly in metal or plastic containers.

WASTE DISPOSAL METHODS: Disposal of N - P - K, fertilizer may be subject to federal, state, and local regulations. User of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with an appropriate regulatory agent before discharging or disposing.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory protection (Specific Type): Respirators are not required under normal ventilated conditions. If heated to evolve ammonia, use appropriate protection. If misted by heat agitation or spray, use a mist respiration approved by NIOSH. Do not use single-use type.

Ventilation:	Local Exhaust:	Adequate	Special:
	Mechanical General:	Only if heated	Other:

Protective Gloves: Rubber Gloves (only if allergies) | Eye Protection: Safety glasses are recommended

Other protective equipment and precautions: Not generally required

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Storage and handling Information:

Other Precautions: None

DOT Class: Not Applicable

Judgement as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Monty's Plant Food Co., Inc. extends no warranties, makes no representations and assumes *no responsibility as to accuracy or suitability of such information* for application to purchaser's intended purpose or for consequences of its use.

Monty's Joy Juice

Plant Food for the Happy-Grow-Lucky

MATERIAL SAFETY DATA SHEET
MONTY'S - Award winning liquid plant food

Manufacturer: Monty's Plant Food Co., Inc.
Address: P.O. Box 22454, Louisville, KY 40222 USA
11902 Brinley Ave – 201, Louisville, KY 40243 USA
Phone: (800) 978-6342

Analysis: Formula 2-15-15
Date: June 7, 2002
Prep. By: John Petrey
Emergency #: (502) 489-9888

SECTION I - MATERIAL IDENTIFICATION

CHEMICAL NAME AND SYNONYMS:	Nitrogen, phosphorus, potassium mixed fertilizer solution	TRADE NAME AND SYNOMYMS:	Monty's Plant Food Monty's Joy Juice N - P - K mixed liquid fertilizer
CHEMICAL FAMILY:	Inorganic Salt	FORMULA:	Fertilizer Salt Complex

SECTION II - INGREDIENTS AND HAZARDS

	%	Hazard Data	Typical Grade	%	Hazard Data
Total Nitrogen as N	2 - 4	N / A			N / A
Total Phosphorus as P_2O_2	15 - 17	N / A	2 - 15 - 15		N / A
Total Potassium as K_2O	15 - 17	N / A			N / A

Balance - Water & Trace impurities

SECTION III - PHYSICAL DATA

Boiling point at 1 atm, degree F	-212	Specific gravity (H_2O = 1)	1.35 - 1.55
Vapor pressure at (n/m Hg)	N/A	Evap. Rate (not applicable = 1)	
Vapor density (Alt = 1)	N/A	Volailles, % by volume	N/A
Water solubility	Complete	Molecular weight	N/A
pH	6.5 - 7.9		

Appearance & Odor: Dark liquid, no apparent odor and/or very mild ammonia

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits	LOWER	UPPER
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Extinguishing media: N P K Solutions are non-flammable. If involved in a fire, use water.

Special fire fighting procedures: None

Unusual fire and explosion hazards: None

SECTION V - HEALTH HAZARD INFORMATION

Effects of overexposure: N P K Solutions are considered to be low health hazards

FIRST AID: Eye Contact:	Flush eyes immediately and thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.
Skin Contact:	Flush skin immediately and thoroughly with water. If irritation persists, get medical attention. (Should only affect if allergic).
Inhalation:	Generally not considered an inhalation hazard.
Ingestion:	If conscious, immediately give large quantities of water and induce vomiting. Get medical attention immediately.

SECTION VI - REACTIVITY DATA

Stability	Stable	X	Conditions to avoid:
	Unstable		When heated (e.g. in a fire) may give off ammonia gas

Incompatibility (Materials to Avoid): Water reactive materials

Hazardous decomposition products: Ammonia

Hazardous Polymerization	May occur		Conditions to avoid:
	Will not occur	X	

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

SPILLS, LEAKS: (Steps to be taken): Since N - P - K is a fertilizer, it may promote entrophication in waterways. In the case of spill, contain spill and maximize recovery. Mop up or pump up properly in metal or plastic containers.

WASTE DISPOSAL METHODS: Disposal of N - P - K, fertilizer may be subject to federal, state, and local regulations. User of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with an appropriate regulatory agent before discharging or disposing.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory protection (Specific Type): Respirators are not required under normal ventilated conditions. If heated to evolve ammonia, use appropriate protection. If misted by heat agitation or spray, use a mist respiration approved by NIOSH. Do not use single-use type.

Ventilation:	Local Exhaust:	Adequate	Special:
	Mechanical General:	Only if heated	Other:

Protective Gloves: Rubber Gloves (only if allergies) | Eye Protection: Safety glasses are recommended

Other protective equipment and precautions: Not generally required

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Storage and handling Information:

Other Precautions: None

DOT Class: Not Applicable

Judgement as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Monty's Plant Food Co., Inc. extends no warranties, makes no representations and assumes no responsibility as to accuracy or suitability of such information for application to purchaser's intended purpose or for *consequences of its use.*

Monty's Joy Juice

Plant Food for the Happy-Grow-Lucky

Material Safety Data Sheet

I. Product and Supplier Information

Product Name: Genesis Soil Rite
Product Number: NA
Product Synonyms: None
Chemical Family or Formula: Not applicable to mixtures

MSDS Number: FLIGSR
Publication Date: Mar. 26, 2003
Replaces: New

Supplier: Frontier Labs, Inc.
42411 201st St.
Bancroft, SD 57353

Product Information: 605-530-2474
Transportation Emergency: Same

II. Composition and Information on Ingredients

CAS #	SARA 313	Material or Component	%	RQ#	Exposure Limits TWA*	STEL*	WEEL*
1305-62-0	No	Lime and Limestone	<50	None	5 mg/m3		

A4=Not Classifiable as a Human Carcinogen BEI= Biological Exposure Limit exists for this material
No component is listed in "Threshold and Biological Exposure Indices for 2001" from ACGIH except as noted above.
Components listed in Title III Sec. 313 (EPCRA) are indicated by "Yes" above.
*TWA= Time Weighted Average; STEL= Short Term Exposure Limit; WEEL= Workplace Employee Exposure Level
NE= Not Established

III. Hazards Identification

OSHA Hazard Classification: Immediate (acute) health hazard. Skin irritant. Chemical burns.

Hazard description: Corrosive
Moderate health hazard. Severe eye irritant. Mucous membrane irritant. Severe inhalation hazard. Severe ingestion hazard.

Particular dangers:
Can cause skin burns from extended moist exposure.

Routes of Entry: Eye, inhalation, ingestion

Chemical Interactions: Reacts rapidly with any acid, and slowly with the carbon dioxide in the air.

Medical Conditions Aggravated:
Any pre-existing disorders or diseases of the eyes. May also affect mucous tissue and/or aggravate mucous membrane disorder.

Human Threshold Response Data
Irritation Threshold: Not established

Hazard Category Classifications and Ratings

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8,
Immediate	Yes	No*	No	No	OSHA 29 CFR 1910.1200 and
Delayed	No	No*	No	No	SARA 302/311/312/313.
HMIS Hazard Ratings: Health 2 Fire 0 Instability 0 Other B (Goggles, gloves)					
NFPA 704 Hazard Ratings: Health 1 Flammability 0 Reactivity 0 Special NA					
Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4					
"No*" in Delayed Fire hazard category indicates lack of a spontaneous combustion hazard.					

Harmful if inhaled or swallowed.

Inhalation Irritation:

High concentrations or prolonged exposure can cause coughing and corrosion of mucous membranes.

Skin Contact:

Not expected to be an acute irritant. Repetitive exposure will de-fat and dry the skin.

Skin Absorption:

Not expected to be a problem.

Eye Contact

Exposure can cause severe irritation including a burning sensation, tearing, redness and swelling.

Ingestion Irritation:

Can cause severe gastrointestinal discomfort and corrosion of the gastrointestinal tract.

Ingestion Toxicity:

See Section XI.

AcuteTarget Organ Toxicity:

Not listed.

Prolonged (Chronic) Health Effects

Carcinogenicity:

Contains no listed or suspected carcinogens.

Reproductive and Developmental Toxicity:

Contains no known or suspected agents.

Sensitization:

See Sec. XI.

General :

Prolonged or repeated exposure may cause irritation to the exposed organs.

Chronic Target Organ Toxicity:

None known

Supplemental Health Hazard Information:

Acute and chronic toxicity of this product is not considered to be fully known.

IV. First Aid

General:

After adequate first aid, no further treatment is required unless symptoms reappear.

Inhalation:

Remove individual to fresh air. If not breathing, give artificial respiration or oxygen as appropriate. Seek immediate medical attention. Prompt action is essential.

Skin Contact:

Flush skin with water for 15 minutes and remove contaminated clothing. Wash shoes and clothing before reuse

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart. Consult a doctor.

Ingestion:

Immediately drink water to dilute. Immediately seek medical advice.

Never give anything by mouth to an unconscious person.

V. Fire Fighting Measures

Flammability Summary (OSHA):

Flammable Properties:	Non combustible
Flash Point:	None
Autoignition Temperature:	Not applicable
Lower Flammable/Explosive Limit, % in a	Not applicable
Upper Flammable/Explosive Limit, % in a	Not applicable
Fire/Explosion Hazards:	Not a hazard

Extinguishing Media:

Use equipment appropriate to the source of the main fire.

Do not allow contaminated water to enter sewers or waterways.

Fire Fighting Instructions:

Use water to cool containers.
Do not allow contaminated water to enter sewers or waterways.
Hazardous Combustion Products:
Oxides of carbon, metal oxide fumes.

VI. Accidental Release Measures

Personal Protection for Emergency Situations:
Evacuate the area of all unnecessary personnel. Eliminate any ignition sources.

Spill Mitigation Procedures
Air Release:
Physical form makes this event non hazardous.
Water Release:
This material has limited solubility in water. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste. Notify all downstream users of possible contamination.
Land Release:
Sweep up for later use. Do not create dust during recovery.
Additional Spill Information:
Stop source of spill as soon as possible and notify appropriate personnel.
Dispose of spill residues per guidelines under Section XIII, Disposal Considerations.

VII. Handling and Storage

Handling:
Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash with water. Avoid breathing dust or mist.
Retained residue may make empty containers alkaline. USE CAUTION!
Storage
Keep container closed. Store in a cool area away from moisture and acids.
Shelf Life Limitations:
See label or certificate of analysis for shelf life if applicable.
Incompatible Materials for Storage:
Refer to Section X, "Incompatible Materials."

VIII. Exposure Controls and Personal Protection

Ventilation:
Local exhaust ventilation or other engineering controls may be required when handling or using this product indoors. For general use out of doors, stay upwind, or otherwise out of any dust generated during application.
Protective Equipment for Routine Use of Product
Respiratory Protection:

Respirator Type(s):
Use masks for nuisance dusts if necessary.

Skin: Wear impervious gloves (butyl rubber, Viton, e.g.) to avoid skin contact. Follow good industrial hygiene practices.
Eyes: Use chemical safety glasses with side shields, safety goggles and/or a full face shield where dusting is possible.
Protective Clothing Type: Impervious

Exposure Limit Data : See Section II

Chemical Name NIOSH Level Immediately Dangerous to Life or Health:
Not found

IX. Physical Data

Physical State:	Powder
Color:	Speckled white
Odor:	Characteristic, mild

Molecular Weight: Not applicable

pH (@ 25 Deg. C): Not applicable
Octanol/Water Coeff: No data

Solubility in Water: Almost 100% soluble
Bulk Density: Not availlable
Specific Gravity: Not availlable

Vapor Density (Air = 1): Not applicable
Vapor Pressure: (@ 25 Deg. C): Not applicable
Evaporation Rate (Butyl acetate =1): Not applicable

Volatiles % by vol.: None
Boiling Point: Not applicable
Freezing Point: Not applicable

X. Stability and Reactivity

Stability and Reactivity Summary:
Stable under normal conditions.
Reactive Properties:
Sensitivity to mechanical shock: None
Hazardous Polymerization: Will not occur
Conditions to Avoid: Exposure to moist air to avoid absoption of water from air.
Chemical Incompatibility: Oxidizers, acids.
Incompatible materials: White metals (aluminum, zinc, etc.)
Hazardous Decomposition Product None
Decomposition Temperature: No data
Product May Be Unstable At Temperatures Above: No data

XI. Toxicological Information

Component Animal Toxicology: Based on hydrated lime
Oral LD50 value mg/kg: 7300 (mus); 7340 (rat)
Dermal LD50 value mg/kg: No data
Inhalation LC50 value: No data
Component fetal effects: Mutagenic effects have been observed in tests with laboratory animals.
Skin Irritation:
This material is expected to be moderately irritating.
Eye Irritation:
This material is expected to be severely irritating.
Reproductive and Developmental Toxicity:
See "Component fetal effects" above in this section.
Mutagenicity:
Mutagenic effects have been observed in tests with laboratory animals.
Carcinogenicity:
This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

XII. Ecological Information

Ecological Toxicity Values:
Environmental fate: No information found.
Enviromental Toxicity: No information found

XIII. Disposal Considerations

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS
Waste Disposal Summary:
Product as made has none of the characteristics of a hazardous waste.
Potential US EPA Waste Codes:

None

Disposal Methods:

Dispose of in accordance with local, state and federal regulations.

Components subject to land ban restrictions:

No components subject to land ban restrictions.

XIV. Transportation Information

Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number	
For non bulk land shipment:	Not regulated
Labels required per 49 CFR 172.101:	None
Size for "Limited quantity" per 49 CFR 173.150-.155:	Not regulated
Reportable Quantity ("RQ") per 49 CFR172.101:	Not applicable
CFR 173: Passenger aircraft / rail:	Not regulated
Cargo aircraft only:	Not regulated
Vessel stowage:	Not regulated
Other:	Not regulated

XV. Regulatory Information

UNITED STATES:

Toxic Substances Control Act (TSCA):

The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

Superfund Amendments and Reauthorization Act (SARA) Title III:

See Section III of this MSDS.

Hazard Categories Sections 311/312 (40 CFR 370.2):

Health:

Acute Yes

Chronic No

Physical: None

Emergency Planning & Community Right to Know (40 CFR 355, App. A):

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

Not applicable

State Right-to-Know Regulations Status of Ingredients

Pennsylvania: No information

New Jersey: No information

Massachusetts: No information

XVI. Additional Information

MSDS REVISION STATUS:

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. WE BELIEVE THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF ITS PUBLICATION DATE, BUT MAKE NO WARRANTY THAT IT IS. IF THIS MSDS IS MORE THAN THREE YEARS OLD YOU SHOULD CONTACT THE SUPPLIER TO MAKE CERTAIN THAT THE INFORMATION IS CURRENT.

FRONTIER LABS, INC.

A SOUTH DAKOTA CORPORATION

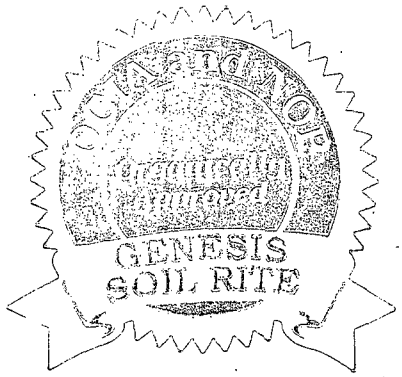
A Little About Who We Are!

Frontier Labs Inc., a South Dakota based company was created to correct the cause of disease, insect and nutrient deficiency in plant production facilities.

High Plains Consulting, our mother company, is involved in large animal health consulting. The staff of High Plains Consulting has been working with pharmaceutical and biological disease prevention since 1984. In 1992, High Plains Consulting expanded their recommendations to specific additional mineral supplementation to target and control pathogenic problems in livestock production sites. This teamed with PH stabilization propelled them to the forefront of all natural production of meat, milk, and eggs. In a constant effort to provide cutting edge technology, we realized vitamins and minerals could prevent and treat diseases.

After eight years of agronomy research, we have proven that the disease in livestock is directly related to the mineral deficiency in the plants they consume. Research shows that mineral deficiency in soil leads to mineral deficiency in plants, which increases the disease level in livestock.

Frontier Labs is committed to excellence and has successfully proven that proper mineral supplementation will naturally eliminate and eradicate problems plant growers chemically fight on a day-to-day basis.



FRONTIER LABS...

"Correcting the Cause"

David Crawford SOS 246-0277

FRONTIER LABS, INC.

A SOUTH DAKOTA CORPORATION

Frontier Labs Inc. Proudly Presents...

GENESIS SOIL RITE

"Correcting the Cause"

Soil is an incredible creation; it has the ability to communicate. If you truly listen, it will tell you exactly what it needs. Is your soil telling you a story of poverty or prosperity?

When soil is tilled, disced, or plowed and it has hardpan, plowpan, compaction, or lumps, your soil is communicating that minerals are bonding together in unhealthy patterns and will not be available to the plants we want to produce.

Without exception, hardpan, plowpan, compactions, lumps and clumps are letting us know there is a deficiency of available calcium. When the P.H. of soil is too high or too low, there is a deficient amount of available calcium. Balance the minerals in your soil and your soil's P.H. will naturally balance itself.

Alkali or high salt soil is screaming for help. During the degradation of these areas your soil is telling you exactly what's going on. For example: when dandelions grow, salt is starting to cause a problem. Next, if you notice along with dandelions, kochia is starting to grow, the salt content is steadily increasing. The next salt loving plant to move in will be foxtail. If foxtail cannot absorb the ever increasing salt content of your soil; the soil then goes dormant or alkali. Several things can be thanked for the increased salt in soil.

Many chemicals and fertilizers contain salt as a carrier, preservative, or safety agent. Wet years and irrigation also bring salts to the surface. The beneficial bacteria in the soil does not like salt and has trouble living in a saline environment. The benefits and jobs that these bacteria do are now negatively altered. Stalks, mulch, and organic matter are now being oxidized rather than being absorbed into the earth. This carbon is not being converted into sugar. When the sugar content of the soil decreases, the sugar content of the plant will also decrease. Low sugar soil and plants give off high infrared, which fits right into plant feeding insect's vision. This high infrared can be seen up to eight miles away by plant feeding insects. When your insect problem increases, you apply more insecticide, which probably has salt, which now adds to your already existing problem.

It is common knowledge that a sugar content of 13% or more is very beneficial for your plant's insect resistance. We know that these insects do not have a pancreas and cannot digest high sugar fiber. We also know that if sugar content is low, plants will never grow to the extent of their genetic potential. These plants will also be low in minerals, vitamins, amino acids and have poor general nutrition. These plants are also losing out on their share of free nitrogen, which makes up over 78% of the air we breath. These same low sugar plants have also lost some of the ability to draw moisture from the air, which now increases the effects of a drought, or increases irrigation costs.

The deficiency of available calcium also plagues your soil and plants with other problems. Weed growth tells a story. Cockle Burr grows in the deficiency of the available mineral silver. Bull Thistle grows in the deficiency of available zinc. Musk or Canada Thistles grow in the deficiency of available phosphorus and Leafy Spurge grows in the deficiency of available nickel. Every mineral has a job.

Genesis Turf Rite

Lawn & Golf Course

Everything Tells A Story:

1) Grass is normally cut on a weekly basis. Increased bagging of grass causes increased removal of nutrients.

2) Chlorine in city water and salt in fertilizer, and chemicals slowly destroys microbes in soil, increases the amount of water needed to maintain lawn. As chemical usage increases, the grass loses the ability to utilize nutrients from the air.

3) 78% of the air we breathe is nitrogen. If plants and soil are nutritionally balanced, plants can obtain a large percentage of the nitrogen they need from the air. Independent lab tests show most plants are running between 40 to 60% efficiency.

4) Commercially applied fertilizers burn calcium out of the soil. Calcium needs to be involved in almost every function of the plant and soil.

5) Too many nightcrawlers in soil means the minerals in the soil have formed compounds that are too large for the soil microbes to break down. When soil becomes even more damaged, nightcrawlers are taken over by grubworms, cutworms, billbugs and other soil creatures.

6) Many lawns are becoming chemical junkies.

7) Correct the cause: Don't just react to symptoms.

8) Genesis builds the soil to increase the sugar content in soil and plant which increases insect resistance. Insects can't digest high sugar content fiber. It ferments, turns to alcohol, and kills the plant-feeding insect.

9) Nutritionally balanced soil is softer and will increase or deepen top soil (aerobic zone).

10) (-) based calcium attaches to salt and carries it down to sub soil. This creates an environment that will once again sustain aerobic bacterial life.

Genesis works in South Dakota...

From the office of Weber Custom Landscaping

February 27, 2003

This letter is written on behalf of the usage of the Turf Product, "GENESIS SOIL RITE" "TURF OF THE EARTH."

As the owner of my own company and a landscape designer for many years with Gurney's Seed & Nursery in Yankton, South Dakota, I used this product for over three years.

Some of the results I saw were helpful in the germination process of newly seeded lawns, and wild flower secondary yards. Upon continual applications on these same newly established yards, the vigor and vitality was clear to me. My customers commented that they have been able to reduce the watering times on their new lawns. These same lawns stayed greener longer even throughout the desecrating summer heat. Follow-up herbicide spray applications were down to a minimum. Some of the older established Kentucky Blue Grass Blended lawns maintained their color longer even through the drought of 2002. I noticed a reduction in herbicide and irrigation on older lawns by about 50%.

Several side tests were also conducted on newly sodded yards and customers comments were the same everywhere, "Why don't I have to water as much where you sprayed as where you didn't?" Business-wise for me, that was the cheapest insurance policy I could have bought to keep customers and their yards going and growing in the right direction.

During field, perennial flower production trials, the overall results were conclusive that where "Genesis Soil Rite" was applied, plant vigor, health and growth were easily noticed above and beyond untreated areas. Higher root production on these same tested perennial plants for "bare root" fall harvest, was at a minimum increase of 30% compared to non-treated areas.

All in all, I will continue to incorporate "Genesis Soil Rite" in all aspects of my business. It's all-natural and it works!

Sincerely,

Keven Weber
owner of "Weber Custom Landscaping"

Genesis works in Wyoming...

March 2003

To whom it may concern,

I have been using Genesis Soil Product for the past 1 1/2 years haying seasons. I have easily seen a 14% increase in the sugar content of my alfalfa with one application. I have also noted a 50% increase in the sugar content of my grass alfalfa hay with three applications (one fall and two crop or summer applications). The volume has increased by 5-20% depending on the number of applications and the soil conditions. Weeds like dandelions, mustard and bine weed (to name just a few) do not like this product and are starting to decrease noticeably. Weevil populations have decreased by half with each application.

Guy Givens
Arapaho, WY

...Genesis works in Wyoming...

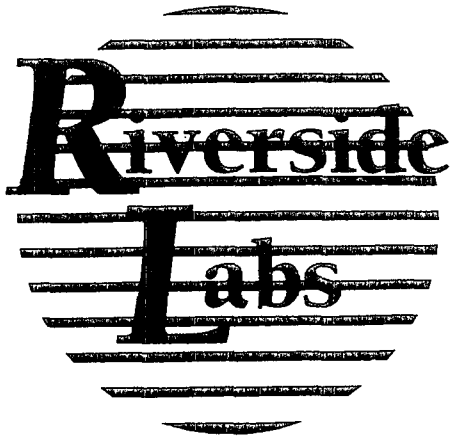
March 2003

To whom it may concern,

Genesis Soil Rite is a revitalizing product to the turf industry. Our company applied on application to approximately 100,000 sq. ft. of different types of turf. This application was double dose of the product in June of 2002. Our customers said and we noticed a remarkable change in the turf. The dandelions for the most part did not bloom, the problem bugs we deal with, started moving out of the turf within two days. This was brought to our attention by our customers, who noticed their yards had never been so full of birds. Our company and our customers are totally sold on Genesis Soil Rite for beautiful natural healthy turf.

Owner
Rob Post
Precision Outdoor Power, Inc.
Riverton, Wyoming

P.S. One customer said that along with a more lush healthy lawn, his Crabapple and Plum trees has larger fruit with a greater amount than ever before.



RIVERSIDE LABS

2609 East Hwy 50
Yankton, SD 57078

Test results have been reprinted with the approval of Riverside Labs.

CERTIFIED ANALYSIS

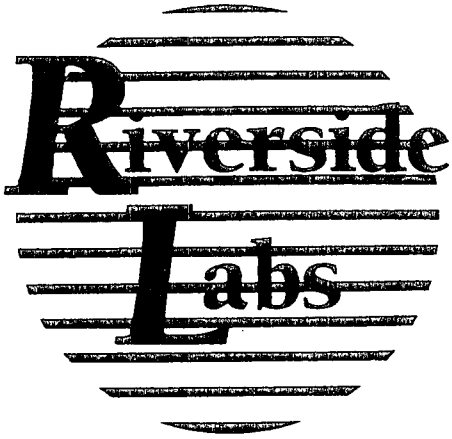
NIR ANALYSIS REPORT

SAMPLE NUMBER	97 (non-treated) 96 (treated)
SAMPLE TYP	Legume Hay and Fresh Forage
SAMPL E ID	E.B.
DATE PROCESSED	6-6-2002
TYPE	DRY MATTER BASIS

DRY MATTER BASIS ANALYSIS

	NON TREATED	TREATED	% CHANGE
MOISTURE, %	0.00	0.00	0.00%
DRY MATTER, %	100.00	100.00	0.00%
CRUDE PROTEIN, %	20.50	23.30	+13.65%
HEAT DAM. PROTEIN, %	.90	0.80	-11.11%
AVAILABLE PROTEIN, %	20.50	23.30	+13.65%
DIG. PROTEIN EST., %	14.30	16.20	+13.28%
ACID DET. FIBER, %	34.20	29.90	-12.57%
NEUT. DET. FIBER, %	41.20	35.40	-14.07%
TDN EST., %	62.20	66.60	+7.07%
ENE EST., THERMS/CWT	52.70	56.80	+7.77%
NE/LACT, MCAL/LB	0.64	0.69	+7.81%
NE/MAINT, MCAL/LB	0.63	0.69	+9.52%
NE/GAIN, MCAL/LB	0.36	0.42	+16.66%
RELATIVE FEED VALUE (RFV)	**140.50**	**172.50**	**+22.77%**
MINERALS			
PHOSPHORUS (P), %	0.23	0.26	+13.04%
CALCIUM (CA), %	1.60	1.70	+6.25%
POTASIUM (K), %	3.54	3.60	+1.69%
MAGNESIUM (MG), %	0.25	0.29	+16.00%

NIR Calibrations are CALTEST CERTIFIED
All wet chemistry is provided by an NFTA certified laboratory.



RIVERSIDE LABS

2609 East Hwy 50
Yankton, SD 57078

Test results have been reprinted with the approval of Riverside Labs.

CERTIFIED ANALYSIS

NIR ANALYSIS REPORT

SAMPLE NUMBER	67 (non-treated) 66 (treated)
SAMPLE TYP	Legume Hay and Fresh Forage
SAMPL E ID	B.B.
DATE PROCESSED	6-5-2002
TYPE	DRY MATTER BASIS

DRY MATTER BASIS ANALYSIS

	NON TREATED	TREATED	% CHANGE
MOISTURE, %	0.00	0.00	0.00%
DRY MATTER, %	100.00	100.00	0.00%
CRUDE PROTEIN, %	21.60	23.80	+9.25%
HEAT DAM. PROTEIN, %	1.00	0.90	-10.00%
AVAILABLE PROTEIN, %	21.60	23.80	+10.18%
DIG. PROTEIN EST., %	14.90	16.40	+10.06%
ACID DET. FIBER, %	31.50	27.70	-12.06%
NEUT. DET. FIBER, %	41.70	36.80	-11.75%
TDN EST., %	65.00	69.10	+6.30%
ENE EST., THERMS/CWT	55.30	59.00	+6.69%
NE/LACT, MCAL/LB	0.67	0.71	+5.97%
NE/MAINT, MCAL/LB	0.67	0.73	+8.95%
NE/GAIN, MCAL/LB	0.40	0.46	+15.00%
RELATIVE FEED VALUE (RFV)	**143.70**	**170.10**	**+18.37%**
MINERALS			
PHOSPHORUS (P), %	0.26	0.28	+7.69%
CALCIUM (CA), %	1.51	1.55	+2.64%
POTASIUM (K), %	1.79	2.04	+13.96%
MAGNESIUM (MG), %	0.29	0.29	0.00%

NIR Calibrations are CALTEST CERTIFIED
All wet chemistry is provided by an NFTA certified laboratory.

STUKENHOLTZ LABORATORY, INC.

2924 ADDISON E. POB 353 TWIN FALLS, ID 83303
TEL: 208.734.3050 800.759.3050 FAX 734.3919

GROWER: NORTHERN UTAH SOD FARMS

Three applications 30 days apart; 45 grams per acre.

BEGINNING SOIL TEST DATA REPORT NO. 78289 DATE REPORTED: 8/09/03		
pH	7.3	M
SALTS, mmhos/cm	4.6	VH
SODIUM, meq/100g	1.3	H
CEC, meq/100g	16.1	M
EXCESS LIME, %	0.3	VL
ORGANIC MATTER, %	1.30	M
ORGANIC N, lb/Acre	50	M
NITRATE-N, ppm	4	VL
PHOSPHORUS, ppm	4	VL
POTASSIUM, ppm	145	L
CALCIUM, meq/100g	8.1	L
MAGNESIUM, meq/100g	6.2	VH
SULFATE-S, ppm	99	VH
ZINC, ppm	1.0	L
IRON, ppm	16.5	H
MANGANESE, ppm	2.4	L
COPPER, ppm	1.0	M
BORON, ppm	0.80	M

ENDING SOIL TEST DATA REPORT NO. 87258 DATE REPORTED: 10/13/03		
pH	7.0	M
SALTS, mmhos/cm	1.5	M
SODIUM, meq/100g	1.0	M
CEC, meq/100g	15.4	M
EXCESS LIME, %	0.1	VL
ORGANIC MATTER, %	1.52	M
ORGANIC N, lb/Acre	65	M
NITRATE-N, ppm	9	L
PHOSPHORUS, ppm	11	M
POTASSIUM, ppm	145	L
CALCIUM, meq/100g	8.3	L
MAGNESIUM, meq/100g	5.6	VH
SULFATE-S, ppm	71	VH
ZINC, ppm	0.5	VL
IRON, ppm	6.0	M
MANGANESE, ppm	1.2	VL
COPPER, ppm	0.8	M
BORON, ppm	0.85	M

South Dakota State University

Oscar E. Olson Biochemistry Laboratories
Analytical Services Laboratory

Box 2170, Rm. 133 ASC
Brookings, SD 57007-1217
Telephone: (605) 688-6171
FAX: (605) 688-6295
WEB: http://anserv.sdstate.edu

Report of Analysis

FRONTIER LABS

Reported: 02/26/2003
Received: 12/19/2002

		As Received Basis
02S-17669	FERTILIZER PRODUCT Ca & HERBS	
Arsenic, ug/g (ppm)		0.5
Cadmium, ug/g (ppm)		0.1
Chromium, ug/g (ppm)		5.4
Cobalt, ug/g (ppm)		<0.3
Copper, ug/g (ppm)		5.
Iron, ug/g (ppm)		340
Lead, ug/g (ppm)		<0.3
Manganese, ug/g (ppm)		23.0
Mercury, ug/g (ppm)		<0.10
Molybdenum, ug/g (ppm)		<0.30
Total Nitrogen, %		0.04
Available Phosphate, %		0.07
Soluble Potash, %		0.00
Calcium, %		22.56
Magnesium, %		0.14
Sulfur, %		0.04.
Boron, %		0.305
Chlorine, %		0.20
Sodium, %		0.04
Zinc, ug/g (ppm)		9.4

FINAL REPORT

Reviewed By: Nancy Thiex

BBC Laboratories, Inc.

Frontier Labs
42411 201st Street
Bancroft, SD 57353

Client Sample ID: **Genesis Soil Rite**
Project: **Unknown**
Sample Matrix: **Soil**
Laboratory ID: **22099**

Date Sampled: **Unknown**
Date Submitted: **8-29-02**
Date Reported: **9-20-02**

REPORT

PARAMETER	CONTROL - 9 DAYS SPECIES RICHNESS DIVERSITY (SRD)[1]	TREATED - 9 DAYS SPECIES RICHNESS DIVERSITY (SRD)[1]	% CHANGE
Heterotrophic Plate Count (Aerobic)	0.7	2.7	+285%
Anaerobic Bacteria	0.2	0.4	+100%
Yeasts and Molds	3.6	2.7	-25%
Actinomycetes	1.4	2.6	+85%
Pseudomonads	1.9	2.8	+47%
Nitrogen-Fixing Bacteria	1.3	0.3	-76%
% Moisture (dw)	23%	29%	+26%
Total Species Richness Diversity (SRDT)[2]	9.1	11.5	+26%

CFU/gdw - Colony Forming Units/gram dry weight sample
Any analysis result reported as "<" indicates a result below detection limits

1. The species richness diversity index is derived by weighing the variety of species within a functional group (species richness) from a normalized analysis again the total number of microorganisms associated with that functional group.

2. The total species richness diversity index (SRDT) is the sum of the individual SRD's for the six functional groups.

Methods: Soil submitted by the client was homogenized and divided into two containers. Product 22099 was added to one sample ("Treated") at a rate of 1 mg product per 1000 cc of soil. This rate is equivalent to the requested application rate of 100 g per acre, assuming a depth of one inch penetration. The control sample received no product. Both samples were moistened to approximate field capacity.

Reviewed by: Vicki N. Bess

MICROBIAL FUNCTIONAL GROUPS
A SUMMARY GUIDE FOR SOIL

BBC Laboratories, Inc.

STANDARD SIX FUNCTIONAL GROUPS

FUNCTIONAL GROUP	SIGNIFICANCE IN INTERPRETATION OF SOIL BIOASSAY
Heterotrophic Bacteria (Aerobic)	▸ Agricultural soil should have ten million to one billion (10^7 - 10^9) CFU/gdw. ▸ Soil with less than ten million CFU/gdw will not be as efficient at recycling nutrients for plant availability and may not be effective in reasonably suppressing plant diseases.
Anaerobic Bacteria	▸ Ration of Aerobes to Anaerobes in the soil should be at least 10:1 or greater. ▸ While it is important to have some anaerobes (non-oxygen using bacteria) for the cycling of soil nutrients, the overgrowth of anaerobes results in the production of by-products which are negative for agricultural purposes.
Yeasts and Molds	▸ Agricultural solids should have between 500 thousand and 5 million CFU/gdw (5×10^5 - 5×10^8 CFU/gdw). ▸ These organisms are important for breaking down organic compounds, stabilizing soil aggregates, and controlling plant disease.
Actinomycetes	▸ Agricultural solids should have at least 100 thousand to 1 million CFU/gdw (10^5 - 10^6 CFU/gdw). Areas with high organic matter could have even more. ▸ These organisms are important for many functions including breakdown and nutrient cycling of complex chemical substances such as chitin and cellulose, improving soil crumb structure, and assisting in the reduction of plant pathogen pressures. They are particularly efficient in alkaline soils.
Pseudomonads	▸ Concentrations should be between 1000 and 1 million CFU/gdw (10^3 - 10^6 CFU/gdw). ▸ Pseudomonads are important in nutrient cycling, assisting plants with phosphorus availability, and some have been linked to the biological control of plant pathogens.
Nitrogen-Fixing Bacteria	▸ The number of free living nitrogen-fixing bacteria in agricultural soil varies a lot, but may be in the range of 1 million CFU/gdw (10^6 CFU/gdw). ▸ Populations of these free living nitrogen-fixing bacterial will proliferate as the available nitrogen in the soil decreases. As a consequence, there is typically an inverse relationship between biologically available nitrogen in the soil and the concentration of free living nitrogen-fixing bacteria.

For additional information concerning these and other functional groups, visit the web site at www.bbclabs.com

ENVIRONMENTAL MICROBIOLOGICAL SERVICES
1217 North Stadem Drive Tempe, Arizona 85281 Phone 480.967.5931 Fax 480.967.5036 www.bbclabs.com

MICROBIAL DIVERSITY ANALYSIS
SOIL AND COMPOST

BBC Laboratories, Inc.

♦ **What is species richness diversity (SRD)?** Species richness is a measurement of diversity that indicates the number of different species or different types of microorganisms that are present in a sample. The SRD determination of microorganisms in a particular microbial functional group is an index of the **variety** of microbes in that functional group. This index is derived from a standard microbial ecology formula that weighs the variety of species within a functional group from a normalized analysis of species richness against the total number of microorganisms associated with that functional group.

♦ **Why is diversity important?** In soil or compost, a high species richness diversity promotes numerous interspecies relationships and interpopulation interactions. Species richness diversity is important because it allows for a more varied and flexible response to environmental fluctuations and stress. For instance, those communities with more diverse microbial populations will be more likely to cope with disturbances and stress than those communities with low diversities.

♦ **How can diversity information be used?** This index can be compared to other samples from a similar matrix (soil, compost, or liquid) and can be used to determine the impact of various crop management and agricultural practices on microbial diversity or to compare and evaluate different microbial products. In addition to the individual SRD determinations for various functional groups, an index for the **total** species richness diversity (SRDT) is a useful tool for the comparison of similar samples. This index found at the bottom line of the analysis sheet is the sum of the six individual SRD s for the sample.

SPECIES RICHNESS DIVERSITY INDEX CLASSIFICATION

SRDT Index for SOIL	Classification	SRDT index for COMPOST
greater than 12.5	High Diversity	greater than 6.5
7 - 12.5	Moderate Diversity	3 - 6.5
less than 7	Low Diversity	less than 3

Examples of Moderate Species Richness Diversity in Soil and Compost

PARAMETER	Species Richness Diversity Index SOIL	Species Richness Diversity Index COMPOST
Heterotrophic Plate Count (Aerobic)	2.9	1.6
Anaerobic Bacteria	1.9	0.8
Yeasts and Molds	2.3	0.8
Actinomycetes	1.2	0.9
Pseudomonads	1.2	0.5
Nitrogen-Fixing Bacteria	0.7	0.3
Total Species Richness Diversity Index (SRDT)	10.2	4.9

ENVIRONMENTAL MICROBIOLOGICAL SERVICES
1217 North Stadem Drive Tempe, Arizona 85281 Phone 480.967.5931 Fax 480.967.5036 www.bbclabs.com

In the News...

Seeing the 'big picture' in ag

Roy Frederick
Public Policy Specialist
Department of Agricultural Economics
University of Nebraska

It is human nature to worry most about what is immediately ahead of us.

For agricultural producers that could be the potential impact of a continuing drought or higher energy prices on 2003 farm incomes.

Occasionally, producer concerns turn to the bigger picture. One ever-important question focuses on the likely level of commodity prices years into the future. Economists love to try to answer such questions. Our response depends fundamentally on expected supply and demand in a worldwide market. In turn, these fundamentals will be impacted by things such as weather, economic growth and trade relationships. Unfortunately, the farther into the future our projections go, the riskier they become.

The U.S. Department of Agriculture recently issued 10-year projections for United States and world agriculture. Here is a brief overview for Nebraska's two largest crops, corn and soybeans.

U.S. corn prices are expected to average $2.40 per bushel for the marketing year that began last Sept. 1. Next year, prices may fall to $2.20 and then to $2.10 for several years after that. Not until 2011-12 will prices creep back up to $2.40.

The projected price pattern is similar for soybeans. After an expected average price of $5.40 per bushel this year, prices may drop to $5.15 next year. By 2009-10, prices inch back to $5.40, before peaking at decade-high of $5.60 in 2012-13.

While I have no reason to refute any of these projections, neither would I want to bet much on them. They simply are USDA's best estimates, given the information at hand. A year from now, when the estimates are updated, they may look much different. And that will hold true for each subsequent annual estimate through 2012-13.

If risks are certain in making long-term price projections, other parts of the big picture in agriculture are easier to assess.

For one thing, low-cost producers will continue to have an advantage in good times and bad. They attain that status by good management skills, astute use of capital and other factors. In short, they are the most competitive producers in a competitive industry. Not insignificantly, they tend to be medium-size to larger producers whose operations are growing.

Another reality is that commodity marketing is becoming increasingly sophisticated. It is not enough anymore to try to pick a high-price day to sell after the crop is in the bin. Savvy producers know what market opportunities are available throughout the year. They also are able to evaluate contracts and other marketing agreements as alternatives to cash sales. Not unlike the production side of agriculture, the advantage increasingly will go to those who navigate their way through an array of market opportunities.

Roundup-resistant weeds becoming a problem

Herbicide's popularity creates conditions for rare weeds to thrive

DES MOINES, IA (DTN)—Roundup-resistant weeds have been discovered in several Eastern States and scientists say the problem is the weed killer's widespread popularity, according to an article in *The New York Times*.

Since 2000, weeds such as mare's tail, water hemp and ryegrass have become resistant to Roundup herbicide. Farmers in Delaware, Maryland, Virginia, New Jersey and even the eastern edge of the Corn Belt have reported problems.

According to the New York Times report, Roundup-resistant mare's tail has infested 20,000 acres in Delaware, Maryland and eastern Virginia. Overall, about half a million cotton and soybean acres in the U.S. have been overrun.

Crop specialists are afraid the resistant weeds will choke fields of crops and require heavier use of other herbicides that would be more damaging to the environment.

Roundup resistant crops, particularly soybeans, now account for more than three-quarters of all soybeans grown in the U.S, according to the NY Times article. Roundup Ready crops are sold by Monsanto and accounted for about $470 million in sales in 2002, according to the NY Times article.

Because of its popularity with farmers, the use of Roundup herbicide has dramatically increased in recent years, creating conditions in which rare weeds that survive the herbicide can flourish, the NY Times reported.

Crop experts told the Times that farmers will need to reduce their Roundup applications on GE soybeans and other crops if they want to preserve the herbicides usefulness.

"With the advent of Roundup Ready crops, all we're using is glyphosate," said Mark Van Gessel, an associate professor of crop science at the University of Delaware, to the NY Times. "Long term, what's going to have to happen is getting away from the continuous use of Roundup Ready crops."

Because the resistance is now only found in a few types of weeds, Crop scientists told the NY Times that farmers can easily use other Herbicides to kill those weeds.

However, some scientists are concerned that resistance could spread, making Roundup herbicide less effective. That would be a problem for farmers because glyphosate is the most popular weed-killing chemical in the world and is considered relatively safe in environmental terms.

Weed specialists told the NY Times that it might be difficult to find a good replacement for Roundup because its success has cut profits from other herbicides and has caused farm chemical companies to decrease investments in developing new ones.

"There aren't a lot of new herbicides coming down the road that will bail us out," Christy Sprague, weed specialist at the University of Illinois, told the Times.

Monsanto officials quoted in the article said resistance is not a big problem.

"The reality is, and the facts are that, one, resistance to glyphosate is rare, and two, where it has occurred around the world it is very manageable," said Kerry Preete, vice president for U.S. markets.

Company officials told the Times that they expect the use of Roundup Ready crops and glyphosate to continue increasing.

Roundup Ready corn accounts for about 10% of all corn grown In the U.S. and Roundup Ready cotton accounts for about 65% of all cotton, according to the Times. Roundup Ready canola, wheat, alfalfa and grass are also in the works.

According to the Times, the use of glyphosate in Monsanto's Roundup and generic products has increased two and a half times since the introduction of the first Roundup Ready crops in 1996.

> "There aren't a lot of new herbicides coming down the road that will bail us out."
> –Christy Sprague, weed specialist, University of Illinois

Scientists told the Times that resistance eventually develops in Almost all herbicides and insecticides. Surprisingly, Roundup, which has been around for about 30 years, has only recently developed resistance problems.

"It's been an amazing herbicide," said Ian Heap, chairman of the Weed Science Society, in the article. "It's been used all around the world For many years, and we haven't seen much resistance."

This fact is reassuring for many scientists because it suggests that resistance will not spread quickly to other types of weeds, according to the article. Still, scientists said herbicides should be varied to prevent a buildup of resistance. Rotating crops helps deter resistance, but only if non-Roundup varieties are planted on alternating years.

Monsanto officials told the Times that they tell farmers to use other herbicides along with Roundup in order to prevent resistance problems.

In the News...

Beetles make quick work of rootworm pests

Ground beetles may not be welcome to city folk who mistake them for small cockroaches, but they are more than welcome in corn fields, because they can be voracious predators of the corn farmer's worst pest, the corn rootworm.

Corn rootworms eating away at corn roots cause farmers to spray more insecticide than do any other pest in the United States.

Ground beetles are so important that Agricultural Research Service scientists are monitoring their populations to ensure that new pesticides—including natural insecticides produced by new varieties of corn plants—don't harm them. As part of this effort, ARS scientists have designed a new, revolving trap that operates like a clock.

New GM corn could make for bountiful harvest

A new, genetically modified (GM) corn, if approved in time for spring, 2003, planting, should make that season the biggest yet for GM corn.

In 2001, U.S. farmers grew GM corn on about a quarter of the land planted to corn.

The new corn, Monsanto's YieldGard Rootworm corn, produces its own *Bacillus thuringiensis*, a natural bacterial insecticide, to kill corn rootworms. The corn rootworm triggers more insecticide use than any other single pest in U.S. agriculture.

To address concerns about corn rootworms' developing resistance to the plant-produced insecticide, Wade French, an Agricultural Research Service entomologist, at Brookings, SD, and colleagues are working with Monsanto to develop the concept of mixing conventional and GM corn seeds. The U.S. Environmental Protection Agency is reviewing Monsanto's application for approval to sell the GM seed. Based on continuing research, the EPA, ARS and Monsanto would determine whether seed sold in a mixture may be a viable commercial alternative the company could eventually consider.

In a five-year cooperative research and development agreement that was renewed recently, the researchers have found the seed mix offered superior corn rootworm control to that of a conventional insecticide and may slow down the development of resistance to Bt.

Plants growing from the conventional seeds in the mix would serve as a refuge, to ensure there are some rootworm beetles not exposed to Bt available to mate with those that are.

This new GM corn has become more important since the corn rootworm has, in the past few years, become the first pest ever to evolve a way of foiling crop rotations. The rootworms rotate the fields they lay eggs in or extend their egg-hatching time to match crop rotations.

Brazil may need to import corn

UBERLANDIA, BRAZIL (DTN)—The first new crop corn is being harvested in Brazil.

Since there is just a small amount coming to market right now, prices remain at pre-harvest levels. In fact, the expectation is that corn supplies will be still tighter this year. For the second consecutive year, corn planted area in Brazil diminished, to the smallest area, according to Leonardo Sologuren, market analyst of Celeres-M.Prado Consulting, since 1965.

With low ending stocks of 2001-2002 estimated at only 1.7 million tons, the corn offer this year will be extremely dependent on the second corn crop, that should be planted starting in February. There is a general concern with this crop in relationship to the weather. Planting of this year's summer crop was delayed significantly, meaning planting of the second corn crop will also be later than ideal. Furthermore, this year is a typical year of "El Nino", usually causing drought in the Center-west, now the largest producing area of the second corn crop.

According to forecasts of Celeres-M.Prado, Brazilian corn production for 2002-03 should total about 36.3 million tons. While that is 3.2% more than the previous year, demand for feed (mostly because of the growth of the poultry sector) has increased by 1.5%, and exports have been projected to increase 10%. With the Real depreciated compared to the dollar, corn exports should continue to be active this year, even with the fall in the production. Between April and May, 2003, there are commitments for 600,000 tons. Corn exports are projected to reach at least 1.5 million tons. In this picture, the final stocks should total only 973,000 tons, what represents a fall of 27.4% in relation to 2001-02.

Due to concern with short ending stocks, the government is adopting emergency steps, seeking to stimulate the planting of more second crop corn. The official credits for planting should be doubled, and the commercialization politics adopted by the government has as the objective of absorbing 2 million tons of the market.

If the second corn crop is not large enough, Brazil will have to look to corn imports. If that happens, Brazil faces two challenges. In the first place, there are the high costs of the imports. In addition, Brazil will need to avoid countries that don't produce corn GMO-free, because Brazilian legislation doesn't allow genetically modified organisms for animal rations. In this case, China could be the main supplier of corn to Brazil.

Refractive Index Of Crop Juices -- Calibrated In % Sucrose Or °Brix

Refractometers are easy to use, even for an inexperienced operator. To make a reading, place 2 to 3 drops of the liquid sample on the prism surface, close the cover & point toward any light source. Focus the eyepiece by turning the ring to the right or left. Locate the point on the graduated scale where the light & dark fields meet. Read the % sucrose (solids content) on the scale. This chart represents values for juices of mature crops.

For reference, pure (distilled) water reads 0 °Brix.

Within a given species of plant, the crop with the higher refractive index will have a higher sugar content, higher mineral content, higher protein content and a greater specific gravity or density. This adds up to a sweeter tasting, more minerally nutritious food (maximum nutritional value) with lower nitrate and water content and better storage attributes.

Crops with higher Brix will produce more alcohol from fermented sugars and be more resistant to insects, thus resulting in decreased insecticide usage. For insect resistance, maintain a Brix of 12 or higher in the juice of the leaves of most plants. Crops with a higher solids content will have a lower freezing point & therefore be less prone to frost damage.

This reading can also indicate soil fertility needs. If soil nutrients are in the best balance & are made available (by microbes) upon demand by plants, readings will be higher.

	Poor	Average	Good	Excellent
Fruits				
Apples	6	10	14	18
Avocados	4	6	8	10
Bananas	8	10	12	14
Cantaloupe	8	12	14	16
Casaba	8	10	12	14
Cherries	6	8	14	16
Coconut	8	10	12	14
Grapes	8	12	16	20
Grapefruit	6	10	14	18
Honeydew	8	10	12	14
Kumquat	4	6	8	10
Lemons	4	6	8	12
Limes	4	6	10	12
Mangos	4	6	10	14
Oranges	6	10	16	20
Papayas	6	10	18	22
Peaches	6	10	14	18
Pears	6	10	12	14
Pineapple	12	14	20	22
Raisins	60	70	75	80
Raspberries	6	8	12	14
Strawberries	6	10	14	16
Tomatoes	4	6	8	12
Watermelon	8	12	14	16
Grasses				
Alfalfa	4	8	16	22
Grains	6	10	14	18
Sorghum	6	10	22	30

	Poor	Average	Good	Excellent
Vegetables				
Asparagus	2	4	6	8
Beets	6	8	10	12
Bell Peppers	4	6	8	12
Broccoli	6	8	10	12
Cabbage	6	8	10	12
Carrots	4	6	12	18
Cauliflower	4	6	8	10
Celery	4	6	10	12
Corn Stalks	4	8	14	20
Corn (Young)	6	10	18	24
Cow Peas	4	6	10	12
Endive	4	6	8	10
English Peas	8	10	12	14
Escarole	4	6	8	10
Field Peas	4	6	10	12
Green Beans	4	6	8	10
Hot Peppers	4	6	8	10
Kohlrabi	6	8	10	12
Lettuce	4	6	8	10
Onions	4	6	8	10
Parsley	4	6	8	10
Peanuts	4	6	8	10
Potatoes, Irish	3	5	7	8
Potatoes, Red	3	5	7	8
Potatoes, Sweet	6	8	10	14
Romaine	4	6	8	10
Rutabagas	4	6	10	12
Squash	6	8	12	14
Sweet Corn	6	10	18	24
Turnips	4	6	8	10

Today's Agriculture has proven to be economically challenging. Unfortunately economics isn't our biggest concern.

Not so many years ago soil was nutrient rich and full of life. A self sufficient growing zone, producing food abundant in vitamins, minerals and amino acids. Over time these soil nutrients have slowly become depleted or unavailable to the plants. Upon depletion of minerals, soil and plants indicate and exhibit signs of starvation and hardship.

Indicators of mineral deficiency are:

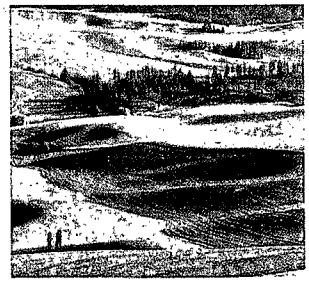
- Soil that has developed hardpan or plowpan
- Increased compaction of soil
- Increased weed variety and weed pressure
- Alkali or high salt in low ground
- Increase in insect problems
- Decreased decay or breakdown of stalks or organic matter
- Increased fertilizer usage
- Abnormal P.H.
- Gaping cracks when soil is dry
- Gumbo Soil

Many chemicals and fertilizers contain salt. Salt kills the microbic bacteria in the soil. These beneficial bacteria are responsible for the breakdown of stalks, preparation of minerals for the plant, and maintaining a healthy aerobic zone (the area where feeder roots intake nutrients).

In the absence of good soil bacteria your soil slowly loses its ability to be self sufficient. Your stalks and manure oxidize and the carbon contributes to ozone deterioration.

When your soil is healthy, beneficial bacteria capture and break down thatch and convert carbon into sugar. This sugar is an important food source for your crop. Teamed with photosynthesis which gathers sunlight, carbon dioxide, water and mineral to create sugar, you are now helping your soil to become a natural self-sufficient growing machine.

The air we breathe contains over 78% nitrogen. When the soil and plants contain the proper blend of nutrients a large percentage of nitrogen and other beneficial nutrients can be obtained from the air, just as Mother Nature intended it to be.



By building the nutrient profile in your soil, several important changes will happen:

1. When the sugar content of plants increases, your soil will build a natural insect resistance (plant feeding insects can not digest high sugar fiber, it ferments, turns to alcohol and kills the insect and grub).

2. Minerals have the ability to displace salt creating an environment where weeds can't thrive.

3. A balanced nutrient soil profile also increases your soil's ability to accept, perculate and gather moisture from the air resulting in lower irrigation costs and increased water conservation.

4. Proper nutrient levels will enhance your soil's ability to gather nutrients from the air and decrease your need for commercially applied fertilizer.

Your soil has been asking and telling you that it needs these life giving nutrients, so that your farm can once again become a natural part of your world.

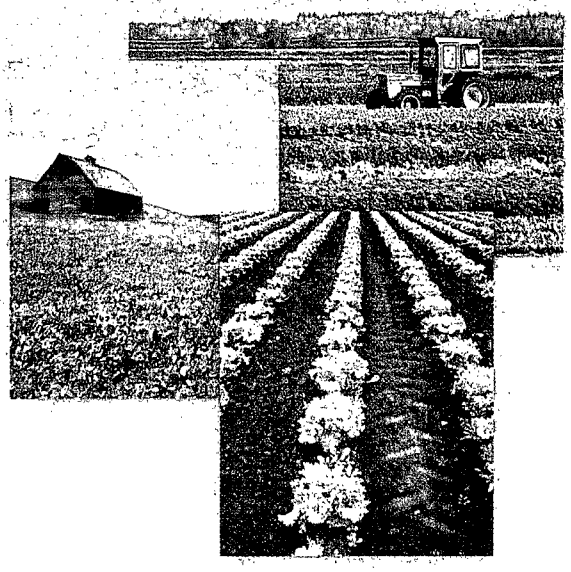
Genesis is a proprietary blend of all natural vitamins, minerals, herbs, and spices for your soil.

TO START YOUR NATURAL SOIL BUILDING PROGRAM

Soil Works District #

David Crawford 505-946-0997

OXY Blast



Genesis Soil Rite