

Nunavut Water Board

Standard Form for Annual Reporting Requirements of NWB2 Exploration Water Licenses

Under the terms of your water licence issued by the Nunavut Water Board ("NWB") for the use of water and the disposal of waste into water associated with mineral exploration (NWB2 Licenses), Licensees are required to submit to the NWB an Annual Report no later than March 31st of the year following the calendar year being reported.

In order to aid the Licensee with the preparation of the Annual Report and facilitate its review by the NWB, Licensees are **required** to use the following form.

Recommendation and Helpful tips for use:

Metric units shall be used to report any relevant data.

How to Add additional space within Text boxes - Right click mouse on the row number (directly to the left of your screen) which falls within the text box range and click insert. **Do not drag or drop text box to modify size of the text box because formatting will not be maintained and data will be lost.** If you have large amounts of data recommend adding additional worksheets. Go to the help menu for assistance.

Electronic versions should be submitted in Adobe to ensure protection of your information. If you do not have shortcut keys to save as a PDF. Go to print menu . Choose to print "Entire Worksheet" then select printer option Adobe PDF and you will be prompted to save the document as a PDF document. Reminder ensure you have saved your document in Excel so that future changes can be made.

Modify the Header - Select "View" then "Header" from the main menu. Select "Custom Header" and change to reflect the valid Water Licence No.

Textboxes denoted with * are optional.

Annual Reports shall be submitted by either fax, mail or email in adobe acrobat or Excel format to:

Nunavut Water Board
c/o Manager of Licensing
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Tel: 867-360-6338
Fax: 867-360-6369
Email: licensing@nunavutwaterboard.org

NWB Annual Report

Year being reported:

License No: NWB-1BR-NUN1217

Issued Date: December 7, 2012

Expiry Date: December 31, 2017

Project Name:

Nunatta Environmental Services Inc. "Landfarm"

Licensee:

Nunatta Environmental Services Inc. "NESI"

Mailing Address:

1575 Federal Road,
P.O. Box 267,
Iqaluit, Nunavut, X0A-0H0**Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):****General Background Information on the Project (*optional):**

Nunatta Environmental Services Inc. (NESI) owns and operates a Hydrocarbon Impacted Soil Landfarm on the outskirts of Iqaluit, Nunavut. This treatment facility is commonly referred to as a 'landfarm'. Nunatta operations consists in accepting soils impacted with petroleum products at various concentrations at the landfarm's geosynthetic lined platform and allow indigenous soil microorganisms to degrade petroleum products to break down compounds such as water, carbon dioxide and hydrogen sulphide. Soils accepted at the landfarm are contaminated with diesel, fuel oil, gasoline and various oils.

Licence Requirements: the licensee must provide the following information in accordance with**A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.**

Water Source(s):

Hydrocarbon contaminated water from variety of sources

Water Quantity:

| | |
|--|--------------------------------------|
| | Quantity Allowable Domestic (cu.m) |
| | Actual Quantity Used Domestic (cu.m) |
| | Quantity Allowable Drilling (cu.m) |
| | Total Quantity Used Drilling (cu.m) |

Waste Management and/or Disposal

☐ Solid Waste Disposal☐ Sewage

- ☐ Drill Waste
☐ Greywater
☐ Hazardous
☒ Other:

0 Cu/m of polished water discharged to environment.

Additional Details:

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A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Revisions to the Spill Contingency Plan

Additional Details:

Revisions to the Abandonment and Restoration Plan

Additional Details:

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

Additional Details: (date of request, analysis of results, data attached, etc)

All discharged water was tested at an approved Lab results included at the end of this report.

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

Additional Details: (Dates of Report, Follow-up by the Licensee)

Any additional comments or information for the Board to consider

Date Submitted:

Submitted/Prepared by:

Nunatta Environmental Services Inc. Iqaluit, NU

Contact Information:

Tel: 867-979-1488

Fax: 867-979-1478

email: nunatta@northwestel.net

GPS Coordinates for water sources utilized

[illegible]

GPS Locations of areas of waste disposal

[illegible]



Blue: Gravel pits

Red: metal Dump

Nunatta Landfarm

Kakivak

Federal Rd

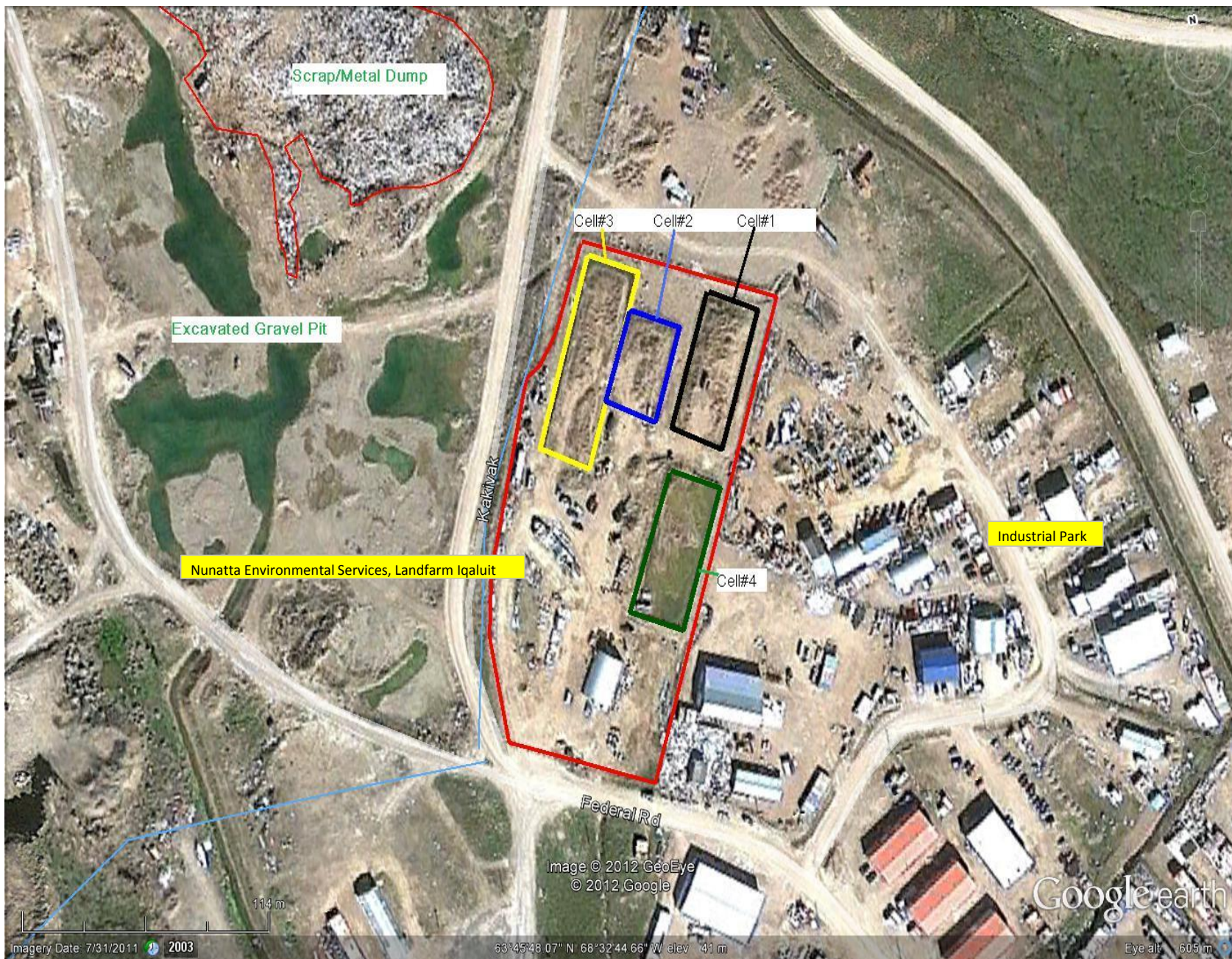
Industrial Park

Google earth

Imagery Date: 7/31/2011 2003

63°45'59.24" N, 58°32'43.98" W elev: 52 m

Eye alt: 1.82 km



Total Soils contained in Nunatta Landfarm cells

| Cell # | Cell Size Meters | Cell Use | Worked Soil cubic M | Rocks Cubic M | Protective cubic M | Total soil in cell "D"+ "F" |
|--------------|------------------|--------------|---------------------|---------------|----------------------|-----------------------------|
| 1 | 60x30 | intake cell | 100 | | 600 | 700 |
| 2 | 50x25 | rock store | 440 | | 400 | 840 |
| 3 | 90x30 | remediated | 660 | 0 | 930 | 1590 |
| 4 | 60x30 | working soil | 1800 | 200 | 900 | 2900 |
| Total | | | 3000 | 200 | 2830 | 6030 |

Summary

Landfarm contains 640 cubic meters of **stones and rocks**

2830 Cubic metres of soil is undisturbed to act as a protection for the geotextile liner below.

2,300 Cubic Metres of soil is **undergoing remediation treatment**

Grand Total

6,030 Cubic metres of soil and rocks are contained in landfarm

Summary

Cell #3 Approximately 800 cubic meters of soil was removed from cell #3 in summer of 2014
 Permission was granted by Robert Eno Head of Environmental Protection, Government of Nunavut.
 This soil will continue to be tested as ppm continues to drop. It is being used as backfill
 On commercial and industrial lots.
 Soils now held in Cell#3 we moved there from cell #4 These soils might reach
 Government of Nunavut Standards standards during the summer of 2014

2013 Water Discharge from Landfarm

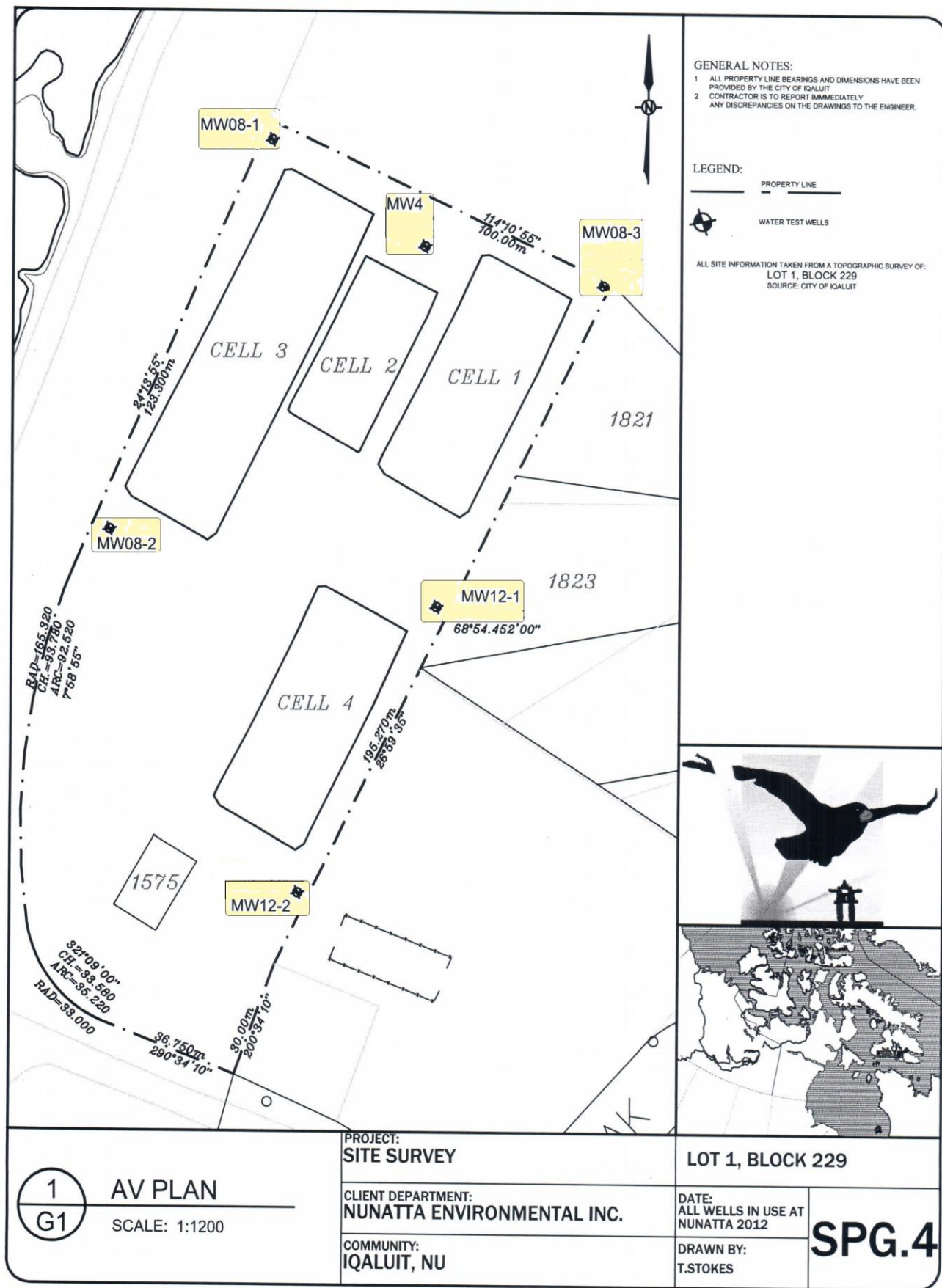
Discharge

| Date | From | To | Permission By | Litres | cu/M | Lab Ref # | Special conditions |
|------|------|----|------------------|--------|------|-----------|--------------------|
|------|------|----|------------------|--------|------|-----------|--------------------|

Total cubic Meters

No water was disscharged from our landfarm this year.

Location of monitoring wells at Nunatta Environmental



Water pump within landfarm cells 2014

| Date | Action | From | Destination | Litre |
|------------------|--------|------------|-------------|---------|
| 6/18/2014 | pump | cell #4 | black tank | 47,000 |
| 6/20/2014 | pump | cell #4 | green tank | 11,000 |
| 7/2/2014 | pump | cell #4 | white tank | 11,000 |
| 7/2/2014 | pump | cell #4 | Cell #3 | 40,000 |
| 7/27/2014 | pump | cell#4 | cell#3 | 11,000 |
| 7/27/2014 | pump | black tank | wash rocks | 47,000 |
| 7/29/2014 | pump | green tank | Cell #3 | 11,000 |
| 7/29/2014 | pump | white tank | Cell #3 | 11,000 |
| 7/29/2014 | pump | cell #4 | Cell #3 | 30,000 |
| 7/30/2014 | pump | cell#4 | Cell #3 | 16,000 |
| 8/5/2014 | pump | cell #4 | Cell #3 | 30,000 |
| Total Litre 2013 | | | | 265,000 |
| Total Cu/M | | | | 265 |

2014 was a cloudy summer and cool almost cold with wind most days. This allowed us to eveaporate off most of our waters. We did not take in water this year from clients and we did not have to pump off due to new methods of evaporating water. Most water was used to thaw soil so remediation could be started earier in the year. We feel this process has gained us 2 months of thawed time each year. Also water is cleaned by the soil as it soakes through.

Impacted soil received at Nunatta for year 2014

| | CUSTOMER | SOILS c/m |
|------------------|---------------------|----------------------|
| Project # | | |
| 14-13 | city of Iqaluit | 2.5 |
| 14-16 | Nunatta 4148 Awa | |
| 14-19 | Iqaluit housing ass | 309.0 |
| 14-21 | Eric Corneau | 73.5 |
| 14-17 | QE (city pool) | 69.0 |
| 14-24 | KCM | 13.0 |
| 14-29 | QE Soils (arena) | 2.0 |
| 14-32 | IHA 1006-1008 | 46.0 |
| 14-37 | DOE 1551 | 30.0 |
| 14-42 | Perkins-Ford 3228 | 1.8 |
| 14-46 | QE soils | 2.0 |
| 14-49 | Transport Canada | 300.0 |
| 14-50 | DND | 78.0 |
| 14-52 | Iqaluit Airport | 450.0 |
| 14-53 | City of Iqaluit | 3.0 |
| 14-58 | QE soils | 2.0 |
| 13-43 | M.O.E. warehouse | 8.0 |
| | Total Cu/M | 1389.8 |

Impacted Snow and water received at Nunatta for year or 2014

| Project # | CUSTOMER | Snow Cm | Water C/M |
|------------------|----------------------------|--------------------|----------------------|
| 13-63 | Uqsuq fill station | 5 | |
| 14-18 | City of Iqaluit | 9.0 | |
| 14-19 | IHA 3220 | 48.0 | |
| 14-68 | City of Iqaluit | 5.0 | |
| 14-39 | Dyke water old tank | | 0.5 |
| | Total snow Cu/M | 62.0 | |
| | Total Water Cu/m | 5.0 | 0.5 |

2014 summer was damp and cloudy. We had a couple jobs where we took in water but only small amount. the balance of what came in was in the form of snow, contaminated with either light oils (hydraulic, or tranmission fluid) or heating oil (Diesel). This snow was put into the cell #1 and covered with soil until the spring melt was over then uncovered and allowed to soak into the soil. This keeps the hydrocarbons from adding contamination to the dyke water of the cell. The dark days and high winds kept permafrost from melting and evaporation of water kept the cells from

Monitoring Well Results

The summer of 2014 was a very cold windy summer. The ground did not thaw enough for us to get water in any of the monitoring wells. The wells remained full of ice all summer and only about 12 inches from ground level was frost free.

| Sample Date | Sample ID# | Test for cell # | Lab Name |
|----------------------|--------------|----------------------------|---------------|
| June 06 2014 | # 1423110 | Full spectrum test | Paracell Labs |
| August 6 2014 | # 1432225 | Cells and yard of landfarm | Paracell Labs |
| August 15 2014 | # 1434025-01 | retest of cell #3B | Paracell Labs |
| September 30 2014 | # 1441084 | Full spectrum test Cell #3 | Paracell Labs |
| September 30 2014 | # 1441085 | Cell #4 | Paracell Labs |

The sample results are included in a separate file along with this report.

Replacement of liner in Cell #2 delayed until 2015

During the summer of 2014 Nunatta Environmental planned to clean out the contents of cell #2, which contained rocks and a base layer of soil to protect the liner from damage. The project was to replace the 20 mil liner with a new 35 mil liner and to add to the length to make cell more usable and to fill in useless area located behind the cell. Permission was granted in a letter from the Nunavut Water Board and work was to be done during summer months.

The summer of 2014 was a cold summer with very little sunlight to thaw the soil. For this reason the ice and frozen ground proved to be too much for us to deal with and we only removed some of the rocks before having to leave it. Since the season was coming to an end we had to proceed with other landfarm activities while the weather permitted us to do so.

We will attempt to remove the contents from cell #2 next summer and replace the liner at that time.

Summary for year of 2014

Summary of Activities at Nunatta Environmental Services Inc. (NESI)

NWB licence 1BR-NUN-1217 Type "B"

Landfarm in Iqaluit for 2014 season

Water

.5 cubic meters of water was brought into Nunatta Landfarm from the pump out of a containment dyke around a fuel tank at DND building in Iqaluit. This small amount less than 1 cubic meter was added to the soil pile in cell #1 with no treatment.

Soils

NESI landfarm received 1389 cubic meters of hydrocarbon contaminated soil for treatment in year of 2014.

In the summer of 2014 permission was granted by Robert Eno head of Environment for the Government of Nunavut to remove soil from cell #3 and use this soil as cover on the dump. The city of Iqaluit experienced a 4 month long dump fire which was extinguished and covered with clean soil and packed tight in an effort to promote plant regeneration on this site.

Soil from Nunatta treatment program is fertilized and plants grow very well in this. The city took all the soil we have removed from our facility over the past 2 years and used it for dump cover. Test results are included with this report. Soils meet CCME industrial requirements.

This summer Nunatta was to reconstruct our cell #2 but due to the cold year we did not get this accomplished. The summer did not yield enough warm to melt all the frozen ground allowing us to remove the contents of the old #2 cell. We will attempt to do this construction next year 2015.

This year we tested our soil plate count early in the season and again late in the season on the same soils. In the spring of the year the soil was contained in Cell #1 and after it had the rocks removed and the proper additives put into the soil mix it was moved to Cell #4 where it is stock piled until next summer when it will again be screened down to smaller size removing all rocks and cobbles down to 3/4 inch and again fertilizers adjusted then soil will be moved into Cell #3 where it remains until it meets CCME requirements.

This year in early season Plate count for Microbial activities was 1000 to 2000 on new soils brought into landfarm after landfarming practices were over in the year 2013. The same soil was tested again just before freezeup and Plate count was up to 123,000 for a low and TNTC (too numerous to count) for the high. This indicates our soil handling practices are working and allow us to achieving large growths in our microbial family.

At the same time the PPM (parts per million) of hydrocarbon fell drastically. Samples show the samples taken in June did not differ much from samples taken in end of July with a high of 1460 ppm in cell #1. After screening and aerating we retested this same soil which is now in cell #4 and the highest sample tested 680ppm.

This was done right before freezeup and it indicates the microbial activity did a great job of reducing the hydrocarbon count in the soil. The average reduction in hydrocarbon is 260 ppm per month of thaw. This can be shown as a percentage where hydrocarbons were reduced by 53% in a 3 month time.

This marks our last year of Boi Char testing with the University of Saskatchewan and we expect a report from them sometime this year. We will include any reports and findings to NWB.