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Dyno Nobel Asia Pacific Pty Ltd

Moranbah Ammonium Nitrate Project

Environmental Impact Statement

October 2006

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

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Executive Summary

The proposed development of an Ammonium Nitrate (AN) Plant in Queensland will supplement the supply of explosives to the coal mining operations in the northern Bowen Basin. Currently there are a two AN Plants in operation within Queensland. These include the Moura AN Plant in the southern Bowen Basin (operated by Dyno Nobel Asia Pacific Pty Limited (DN)) and the Orica AN Plant in Gladstone. Dyno Nobel Asia Pacific Limited also operates an AN Plant in Western Australia through a joint venture with Wesfarmers CSBP Ltd in Kwinana WA.

The significant expansion of mining in Queensland following the resources boom has placed a significant requirement on the production of AN for use in explosives.

DN has significant experience in the development of AN and in the production of detonators for explosive manufacture. DN operates in Australia and America and has been producing AN and other explosive components since 1965.

The proposed AN Plant will provide a capacity of 260,000 T per year of AN Prill (solid) and approximately 90,000 T per year of AN Emulsion (nominal 350,000 T per year). Movement of the material and equipment for construction of the project will be over the existing road infrastructure leading into Moranbah. The AN Plant will initially service mining operations in the northern Bowen Basin but would be subsequently expected to service other operations located further afield.

Ammonium Nitrate produced from this Plant will be used as the raw material for explosive production in open cut mining. The construction of the AN Plant will increase the permanent workforce in Moranbah and will provide an opportunity for growth within Moranbah.

The transportation of product to these operations will be through the use of trucking operators. This was selected as the preferred method for transport as there is limited infrastructure in place for rail transport to the existing clientele of the project.

The AN Plant is proposed to be located approximately 4.5 km to the west of the township of Moranbah along Goonyella Road. This site was selected as it is in a location suitable for the development of heavy industry and provides a buffer from the operation of the facility to the township. The AN Plant will take an estimated 22 months to construct and employ at its peak approximately 550 staff.

This Environmental Impact Statement (EIS) is focused on the development and operation of the AN Plant and its impact on the environment, surrounding land uses, infrastructure and community. The development of the project will be phased over the construction period to ensure the efficient construction of the facility. To service the construction workforce for the project DN proposes to develop a construction camp. This construction camp is proposed to have in place both a wet (with alcohol) and dry canteen to provide for the staff housed there.

The construction camp is designed to be expandable up to 550 staff if required and has a significant area available for irrigation. The construction camp is also proposed

to be connected to the AN Plant by an internal road to minimise the impacts on Goonyella Road during peak periods. A sewage treatment plant for the site has been investigated to manage the effluent generated from the construction camp.

Water for the project will be obtained from the Burdekin water pipeline (currently under construction) through contracts with both the BHP Mitsubishi Alliance Pty Ltd and Sunwater. The water for the project is intended to provide for both the construction and operation of the facility as well as the provision of water supply for the operational and construction workforce based in and around Moranbah.

Legislative Framework

The proposed Moranbah AN Plant was declared a Significant Project on the 31st of March 2006 by the Queensland Coordinator-General (CG) under Section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (the SDPWO Act). The declaration of this project as significant requires the development of an EIS.

The EIS is a key information source for the development of an assessment report from the CG (the CG Report). The CG report may streamline the subsequent approvals processes of the applicable State legislation including the *Integrated Planning Act 1997 (IPA)* and the *Environmental Protection Act 1994 (EPA)*.

In accordance with Part 4, Section 31(1) of the SDPWO Act, the CG may seek information to assist with the preparation of the EIS. The CG Report is then prepared in accordance with Part 4, Section 35(4) of the SDPWO Act, and may be based on different advisory agency and general public responses on the project. The Advisory Agencies include:

- The Department of Main Roads (DMR);
- The Department of Transport (QT);
- The Environmental Protection Agency (EPA);
- The Department of Natural Resources and Water (DNRW);
- The Department of Mines and Energy (DME);
- The Department of Communities;
- The Department of Housing (DEH);
- The Department of Emergency Services (DES);
- The Department of Primary Industries and Fisheries (DPIF);
- The Department of Aboriginal and Torres Strait Islander Policy (DATSIP);
- Belyando Shire Council.

The CG Report provides recommendations on the project including any conditions that must attach to any subsequent Development Approval. The CG Report provides the minimum approval conditions for the Material Change of Use (MCU) for the project on application to the Assessment Manager (Belyando Shire Council). This MCU then provides for the finalisation of detailed design and submission of the design to the Assessment Manager for operational works approval.

Project Need and Alternatives

The rapidly expanding coal mining industry is driving the need for AN production capacity in the northern section of the Bowen Basin. The options and alternatives for the project are limited due to the production methodology relying on the provision of adequate supplies of methane gas and water.

Appropriate gas supplies are available at different locations around the Bowen Basin, however, the supplies of water are limited. During the initial stages of the project, an investigation was undertaken by DN into the expansion of the existing AN Plant in Moura, Central Queensland.

This alternative had a number of limitations especially with regard to an adequate water supply. The proposed site at Moranbah provides both a reliable supply of coal seam methane gas for production of the AN, good access to the mines in the northern section of the Bowen Basin and an adequate water supply from the Burdekin Pipeline.

If the project were not to proceed it would limit the further production and development of AN for the expansion of minerals and energy development in Queensland and significantly increase the cost and import dependency of AN products to Queensland industries.

Land uses, topography, soils and geology

Both mining and grazing interests dominate the surrounding land use for the project. The site also has nearby industrial operations including gas pipeline and extraction infrastructure for the coal seam methane, the Enertrade Compression Station and the Blair Athol railway line.

A number of leases also cover the proposed project site including a Mineral Development Lease and a Petroleum Lease. Two pipelines run along the front of the proposed site and will require measures to protect this infrastructure from any potential damage. There are two remnant ecosystems that cover part of the site that has been used for grazing purposes. There is evidence of past chemical clearing of vegetation on the western side of the site.

There are two watercourses in the general vicinity of the project site. These are Grosvenor Creek 1.5 km to the southwest of the proposed site and the Isacc River 4 km to the north of the site. The proposed site is fairly flat, with slope over the site generally less than 5%.

A Land Suitability Study has been undertaken in accordance with that requested by DNRW and based on the *Planning Guidelines: The Identification of Good Quality Agricultural Land* (Queensland Department of Local Government and Planning, 1993)(GQAL) and the *Guidelines for Agricultural Land Evaluation in Queensland* (QDPI Land Resources Branch, 1990).

The study area has been assessed to be suitable for pastoral land, and is not considered to be good agricultural land. This land is suitable for native and marginal for improved pastures. Limitations preclude continuous cultivation for crop production, but

some areas may tolerate a short period of ground disturbance for pasture establishment, although vegetation clearing would first be required.

The geology of the site encompasses a number of coal seams that underlie the project site. These include the Harrow Creek, Dysart and P seams. An assessment of the impact on these coal resources was undertaken as part of the EIS.

Water resources and energy

The water resources surrounding the site are fairly limited. Grosvenor Creek and the Isaac River are ephemeral watercourses. The groundwater in the area predominately follows the coal seams. During brief periods of flow these watercourses are characterised by high turbidity from cleared land adjacent to the watercourses.

The proposed development of the AN Plant aims to provide a significant buffer for the site and to minimise the amount of clearing required. These measures, along with the low slope of the land, will assist in minimising the erosion resulting from the project. Additional measures include the use of diversion drainage on the site to prevent water from impacting on disturbed soils on the site.

The development of the AN Plant and its operation should have minimal impacts on soil erosion over the site, provided appropriate erosion controls are implemented.

The power for the operation of the site will be provided through an onsite power generation facility, which will provide up to 15 megawatts of power for the AN Plant. These gas powered generation units will be purpose built for power supply to the project.

The implementation of a power generation facility has been instigated for the project as development of the proposed Transfield Moranbah and Nebo Power Stations Project has been delayed.

Air Quality

An assessment of the existing air quality in Moranbah and the impacts of the project was undertaken for the different emission sources from the project. The assessment included NO_X (Oxides of Nitrogen) and particulate emissions from the AN Plant and the power generation facility.

The modelling undertaken assessed the ground level concentrations of different emissions against the National Environmental Protection Measure (Air) (NEPM) and the state Environmental Protection Policy (Air) 1997. The assessment found that the air emissions from the project did not exceed the air emission criteria provided by either of these government policies.

Waste

An assessment of the waste generation from the proposed AN Plant was undertaken as part of the EIS. This included the solid and liquid waste from construction activities and operational wastes resulting from the production of AN Prill and AN Emulsion.

An assessment was also undertaken of the waste generation and management from a sewage treatment facility that will be operated as part of the construction camp for the

project. The waste generated from the project can be effectively managed through the implementation of good practice, the development of new infrastructure and the use of existing infrastructure for waste disposal (e.g. effluent irrigation and landfill disposal).

Noise and Vibration

An assessment was undertaken for noise generation during both the construction and operation of the facility. The location of the AN Plant and the type of operation are unlikely to impact on the nearest sensitive receptors to the site (the Marley Accommodation Camp, approximately 2.5 km toward Moranbah). Vibration impacts for the project will be generated during construction operations. However the impacts of this vibration will be minimised by both the separation distance from the site to adjacent infrastructure and the method of construction.

Nature Conservation

A site survey for the project was undertaken to identify and assess the mapped regional ecosystems (REs) on the site and also to identify fauna that may occur on the site. As a part of the assessments, a number of survey transects were established across the site. These transects confirmed the current mapping of REs from the area, with some variations. A Vegetation Management Plan has been prepared for the proposed clearing on the site that impact on the remnant ecosystems.

The fauna assessment of the site identified a number of different species. None of the species found are listed threatened species under the Commonwealth *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act) and therefore referral to the Commonwealth Department of Environment and Heritage was not required. No other matters of National Environmental Significance (NES) under the EPBC Act will be impacted by the project.

Native Title & Cultural Heritage

At the time of the commencement of the project there where two Native Title claims current for the area. This included the Wiri #2 and the Barna, Barada, Kalamra, Yetimarla #4 (BBKY) Native Title claims. Both of these claims covered the area of the proposed site. It is believed that current leasehold tenure over the site has extinguished Native Title.

Searches of the Cultural Heritage databases managed by the DNRW and surveys of the site by the Traditional Owners (the BBKY) and a qualified archaeologist identified a number of culturally significant sites and items over the project area.

These sites were catalogued and recorded. The Traditional Owners of the site have requested that the location of the culturally significant sites remain confidential between themselves and the proponent. The Traditional Owners have also advised that they would refer the locations of the culturally significant sites to the Cultural Heritage Unit of the DNRW. In accordance with this request no referral has been made to DNRW of these sites.

The layout of the site has been designed to avoid the disturbance of the known Cultural Heritage sites. A draft CHMP has been prepared for the development of the

site and is currently in discussions between the Traditional Owners (BBKY and Wiri) and DN.

Social Impact

A Social Impact Assessment (SIA) was undertaken to identify the impacts on the local and regional communities in the area.

Primarily the area is focused on mining and cattle grazing, with these two land uses represented in close proximity to the project site.

As with other shires in the area, there is a skills shortage as a result of the current resources boom. Housing in the area is significantly restricted due to mining interests surrounding the town and current limitations on land available for housing. DN has taken steps to minimise the impact of the project on the existing housing infrastructure through the proposed provision of housing for the operational workforce and the provision of a temporary construction camp during construction of the facility.

Moranbah has good community and infrastructure services. However, there is a drift of population occurring in some surrounding townships towards the coastal city of Mackay. The SIA provides details of the community concerns in relation to the project and a more detailed assessment of impacts from the project.

A community consultation report has also been prepared for the project and provides the outcomes of community consultation undertaken for the Terms of Reference (ToR).

Economic Environment

The character and basis of the economies of Moranbah and Belyando Shire are described, including:

» Current local and regional economic activity;

» Existing labour force and unemployment statistics;

» Types and numbers of businesses; and

» Availability and prices of goods and services.

The development of the AN Plant will have a number of positive and negative impacts. The employment within the area is primarily focussed around the operations of the mining activities. There is a significant skill shortage in the area and it is likely that the majority of the operational workforce will be sourced from outside of Belyando Shire.

The proposed development of the AN Plant will increase pressures on housing in the area. To address this, DN has undertaken investigations into the purchase of housing for the operational workforce. While the construction workforce will place additional pressures on the township of Moranbah, the construction workforce will be housed in a construction camp to limit the impact on the community.

The local economy of Moranbah however will benefit considerably from the project, both directly and indirectly, as a result of the long-term employment that will occur during the operational phase of the development, and short-term employment during the required 22-month construction phase. Importing of AN into the State will also be reduced as a result of the project, resulting in an improvement in Gross State Product.

Competition for explosives will be maintained at a state level through this facility, and the contribution to the economy of Australia from export earnings, taxes, salaries and purchases of goods and services during the construction and operation phase of the development will have a flow on effect for the economy at a state level.

Contribution to the economy of Australia will also be felt from export earnings, taxes, salaries and purchases of goods and services during the construction and operation phase of the development.

The existing landholders of the area surrounding the AN Plant have been consulted regarding the operation of the facility and allowances have been made to ensure the operation of the AN Plant does not negatively impact on the grazing operations undertaken in the surrounding area.

Transport Infrastructure

The transport infrastructure has been assessed through modelling of the impacts from both the construction workforce and the heavy vehicle traffic on the existing infrastructure servicing the site, specifically Goonyella Road and the Peak Downs Highway.

The modelling undertaken has indicated that the proposed intersections into and out of both the AN Plant and construction camp are suitable for the facility. Modelling has also identified that the traffic generated during construction will not significantly impact on the existing road infrastructure.

A Pavement Assessment has been completed to assess the impacts of the heavy vehicle traffic on the transportation routes around Moranbah. This Pavement Impact Assessment follows the DMR calculation methodology for assessing impacts on the road infrastructure. The assessment indicates that there are a number of roads that will be impacted by the project and will require the payment of pavement maintenance for the project's contribution of heavy vehicle impacts.

Hazard and Risk

A Preliminary Risk Assessment (PRA) was undertaken for the facility incorporating the power generation facility. This risk assessment identified key risks from the facility that may have offsite impacts. The risks assessed included:

- Explosion risk;
- Ammonia gas release;
- Toxic gas release;
- Projectile risk; and
- Natural hazard risk.

The layout and proposed development of the AN Plant was adjusted to minimise the potential for offsite impacts from the project. The report also recommend updating the Quantitative Risk Analysis once the facility design is finalised and modifying the Safety Management System via the Major Hazard Facility Safety Case. The update should

incorporate onsite risks and any potential changes to the population in the area since the PRA was completed.

Preliminary health and safety provisions have been incorporated as part of the workplace health and safety for the project site, including emergency and safety systems planning. These workplace health and safety provisions will be updated on finalisation of the design.

Greenhouse Gas

An assessment of the greenhouse gas (GHG) emissions from the AN Plant and the operation of the power generating facility has been undertaken. This assessment focussed on the volumes of GHG generated by the operation and the construction of the facility.

This preliminary assessment indicates that emissions of GHG directly attributable to the operation of this plant are likely to be approximately 430,000 T CO_2 equivalent per year (maximum 469,000 T). The 469,T CO_2 equivalent per year of GHG allows for 145,000 (electricity), 38,000 (natural gas) and 286,000 (fugitive emissions).

Opportunities to offset GHG emissions from the plant construction and operation process are currently being considered to establish the magnitude of the work required to produce a significant impact. An option being considered is tree-planting and landscaping at the Moranbah site.

The cost of importing AN from overseas would substantially increase the amount of GHG produced taking into account the production and transportation costs. Additionally the importing of other constituents for AN manufacture is also a potentially significant increase in GHG emissions over the production of AN in the Northern Bowen Basin.

Conclusions and Recommendations

The development of an AN Plant in this part of the Bowen basin is important for the effective provisioning of constituents for explosive manufacturing for mining. The project will provide significant employment opportunities and may attract skilled workers into the area. The project also provides an alternative employer to the area that is not solely dependent on coal mining.

The major impacts / potential impacts identified in the EIS include:

» Increased potential risks from the operation of a major industrial facility;

» Increased need for housing and infrastructure;

» Benefits to local, regional and state economy;

» A manageable increase of traffic; and

» Minor impacts on the air quality of the area during construction and operation.

The EIS concludes that after the implementation of appropriate mitigation measures, the benefits from the proposed AN Plant can be realised without causing undue risk to the environment, the community or cultural heritage over the area.

Glossary

Abbreviation	Description
A-weighted	The overall level of sound is usually expressed in terms of dbA, which is measured using a sound level meter with an "A-weighting" filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.
AHD	Australian Height Datum.
ALARP	As Low As Reasonably Practicable.
AN	Ammonium Nitrate.
ANSOL	Ammonium nitrate solution.
ANZECC	Australian and New Zealand Environmental Conservation Council.
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand.
AS	Australian Standard.
BOM	Bureau of Meterology.
BSC	Belyando Shire Council.
CadnaA	Computer Aided Noise Abatement software used for calculating predicted noise emissions.
CoRTN	Calculation of Road Traffic Noise algorithm is published by the UK Department of Transport, 1998.
CG	The Coordinator-General of the State of Queensland.
CH_4	Methane (major component of coal seam gas).
CHMP	Cultural Heritage Management Plan.
CO	Carbon monoxide.
CO_2	Carbon dioxide.
^0C	Degrees Centigrade.
Core	Piece of stone from which flakes have been removed.

Abbreviation	Description
dB	Decibel, which is 10 times the logarithm (base 10) of the ratio of a given sound pressure to a reference. Pressure; used as a unit of sound.
dB(A)	Unit used to measure 'A-weighted' sound pressure levels.
DCS	Distribution Control System.
DEH	Commonwealth Department of the Environment and Heritage.
DME	Queensland Department of Mines and Energy
DMR	Queensland Department of Main Roads.
DN	Dyno Nobel Asia Pacific Limited.
DNRW	Queensland Department of Natural Resources and Water
DPIF	Queensland Department of Primary Industries and Fisheries.
Edge ground axe	Axe shaped piece of stone that has been knapped and ground to produce sharp edges.
EIA	Environmental Impact Assessment.
EIS	Environmental Impact Statement.
EMP	Environmental Management Plan.
EP	Environmental protection.
EP Act	*Environmental Protection Act 1994 (Qld).*
EPA	Queensland Environmental Protection Agency.
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999 (Cwlth).*
EPP	Environmental Protection Policy.
ERA	Environmental risk analysis.
ERPG	Emergency Response Planning Group.
GHG	Greenhouse gas.
IAS	Initial Advice Statement as defined the *State Development and Public Works Organisation Act 1971.*
IPA	*Integrated Planning Act 1997 (Qld).*

Abbreviation	Description
Flake	A piece of stone which is removed (knapped) from a core; the flake may be a planned artifact or a waste by product which is discarded.
Grinding	Manual abrasion.
Grindstone	A stone artifact, with relatively flat surfaces used as a base to grind seeds, roots or tubers and/or ochre; a rounded stone (muller) was used as a pestle to grind the material; grindstones are made from coarse-grained abrasive material such as sandstone.
Ha	Hectares.
HIPAP	Hazardous Industry Planning Advisory Paper.
Hz	The units for frequency are known as Hertz (Hz).
Knapping (flaking)	The process of hitting one stone (a hammerstone) on another (a core) to produce flaked stone artifact.
kg/ha/yr	Kilograms per hectare per year.
kg/month	Kilograms per month.
kPa	Kilopascals
L_N	Statistical sound measurement recorded on the linear scale.
L_{AN}	Statistical sound measurement recorded on the “A” weighted scale.
$L_{A10\ (Time)}$	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
$L_{A10\ (1\ hour)}$	The L_{A10} level measured over a 1-hour period.
$L_{A10\ (18\ hour)}$	The arithmetic average of the L_{A10} levels for the 18-hour period between 0600 and 2400 hours on a normal working day. It is a common traffic noise descriptor.
$L_{Aeq\ (Time)}$	Equivalent sound pressure level: the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring.
$L_{Aeq\ (15\ hr)}$	The L_{Aeq} noise level for the period 7 am to 10 pm. (Day and Evening).
$L_{Aeq\ (9\ hr)}$	The L_{Aeq} noise level for the period 10 pm to 7 am. (Night).
$L_{Aeq\ (1\ hr)}$	The L_{Aeq} noise level for a one-hour period. It represents the highest tenth percentile hourly A-weighted L_{eq} during the period 7 am to 10 pm, or 10 pm to 7 am, (whichever is relevant).
$L_{A90\ (Time)}$	The A-weighted sound pressure level that is exceeded for 90 per cent of the time over which a given sound is measured. This is considered to represent the background noise e.g. L_{A90} (15 min).

Abbreviation	Description
$L_{AMax\ (Time)}$	The maximum sound level recorded during a specified time interval.
$L_{AMin\ (Time)}$	The minimum sound level recorded during a specified time interval.
Linear	Sound levels measured without any weightings are referred to as “linear” and the units are expressed as dB(lin).
MAC	Marley accommodation camp
MEDLI Model	Nutrient balance model, used as a modelling tool for assessment of water and effluent disposal.
ML	Megalitres.
MSDS	Material Safety Data Sheet.
MW	Megawatt.
NCA	*Nature Conservation Act 1992 (Qld).*
NDT	Non-destructive Testing.
NEQ	Net Equivalent Quantity.
NEPM	National Environmental Protection Measure.
NH_3	Ammonia.
NA	Nitric acid.
NH_4NO_3	Ammonium nitrate.
Nm^3/s	Normal cubic metres/second.
Nodule	A natural concretion.
NOHSC	National Occupational Health and Safety Commission.
NO_x	Oxides of Nitrogen.
NO_2	Nitrogen Dioxide.
DNRW	Queensland Department of Natural Resources and Water.
DME	Queensland Department of Mines and Energy
ML	Megalitres
m/s	Metres per second.
Ochre	Soft varieties of iron oxide materials such as haematite (red ochre), goethite and limonite which are used as pigments for

Abbreviation	Description
	painting and personal decoration.
pa	Per annum.
Pebble	Stone worn and rounded by natural forces such as water.
Petrified wood	Wood that has undergone the process of fossilisation to produce a stonelike substance.
PFD	Process Flow Diagram.
PHAST	Process Hazard Analysis Software Tool.
PJ/a	Petajoules/year.
PLL	Potential Loss of Life.
PM_{10}	Particles smaller then 10μm.
PPE	Personal Protection Equipment.
PRA	Preliminary Risk Assessment.
Primary flake	One of the first pieces to be struck off a block of stone; retains the cortex (the original outside surface) of the core.
PSA	Pressure Swing Adsorption.
QLD	Queensland.
QRA	Quantitative Risk Assessment.
Rating Background Level (RBL)	The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24 hour period used for the assessment background level). This is the level used for assessment purposes. It is defined as the median value of: All the day assessment background levels over the monitoring period for the day; (7 am to 6 pm); All the evening assessment background levels over the monitoring period for the evening; (6 pm to 10 pm) or All the night assessment background levels over the monitoring period for the night. (10 pm to 7 am).
Retouch (secondary flaking)	The working of a primary flake to make a tool.
RF	Reformer furnace.
RO	Reverse osmosis.

Abbreviation	Description
Scraper	Retouched flake with a thick working edge; probably used to scrape skins or for woodworking.
SDPWO Act	*State Development and Public Works Organisation Act 1971 (Qld).*
Secondary flake	Struck off a core early in the flaking process, but retains some cortex and some flake scars.
SIS	Safe instrument system.
SLM	Sound level meter.
SMS	Safety Management System.
SSAN	Security Sensitive Ammonium Nitrate.
SO_x	Oxides of Sulphur.
T	Tonnes.
Taphonomy	The study of the processes that have acted on an archaeological site to make it as it appears today.
Tertiary flake	Product of the last stages of the knapping process; no cortex remains.
ToR	Terms of Reference.
Tpa	Tonnes per annum.
Tpd	Tonnes per day.
TSP	Total Suspended Particulates.
Tula or tula adze	Hafted chisel with a semi-circular working edge made from a thick flake; used to work hardwoods.
V	Volts.
WWTP	Waste Water Treatment Plant.